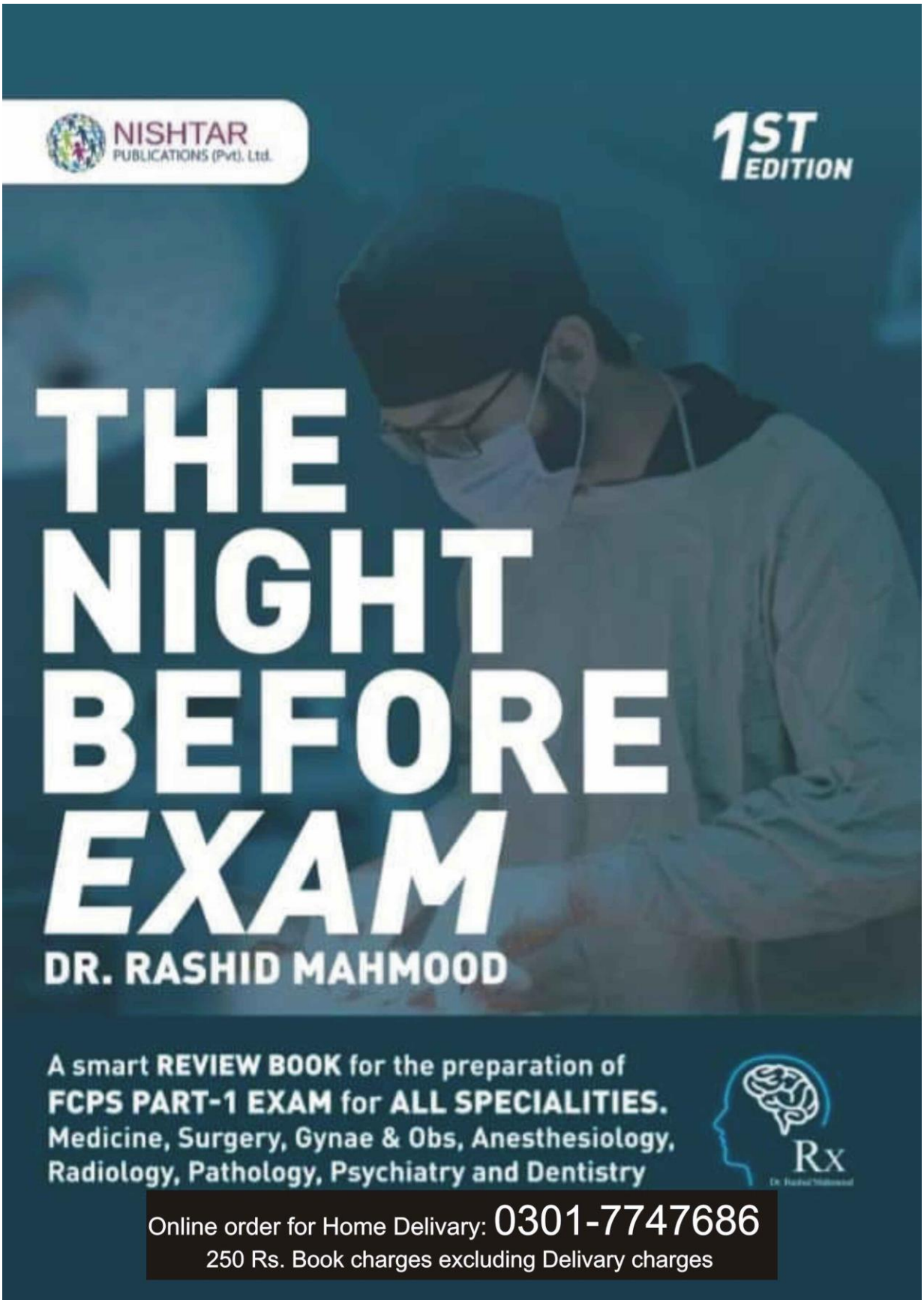
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1ST EDITION
THE NIGHT BEFORE EXAM
DR. RASHID MAHMOOD
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FCPS PART-1 EXAM for ALL SPECIALITIES.
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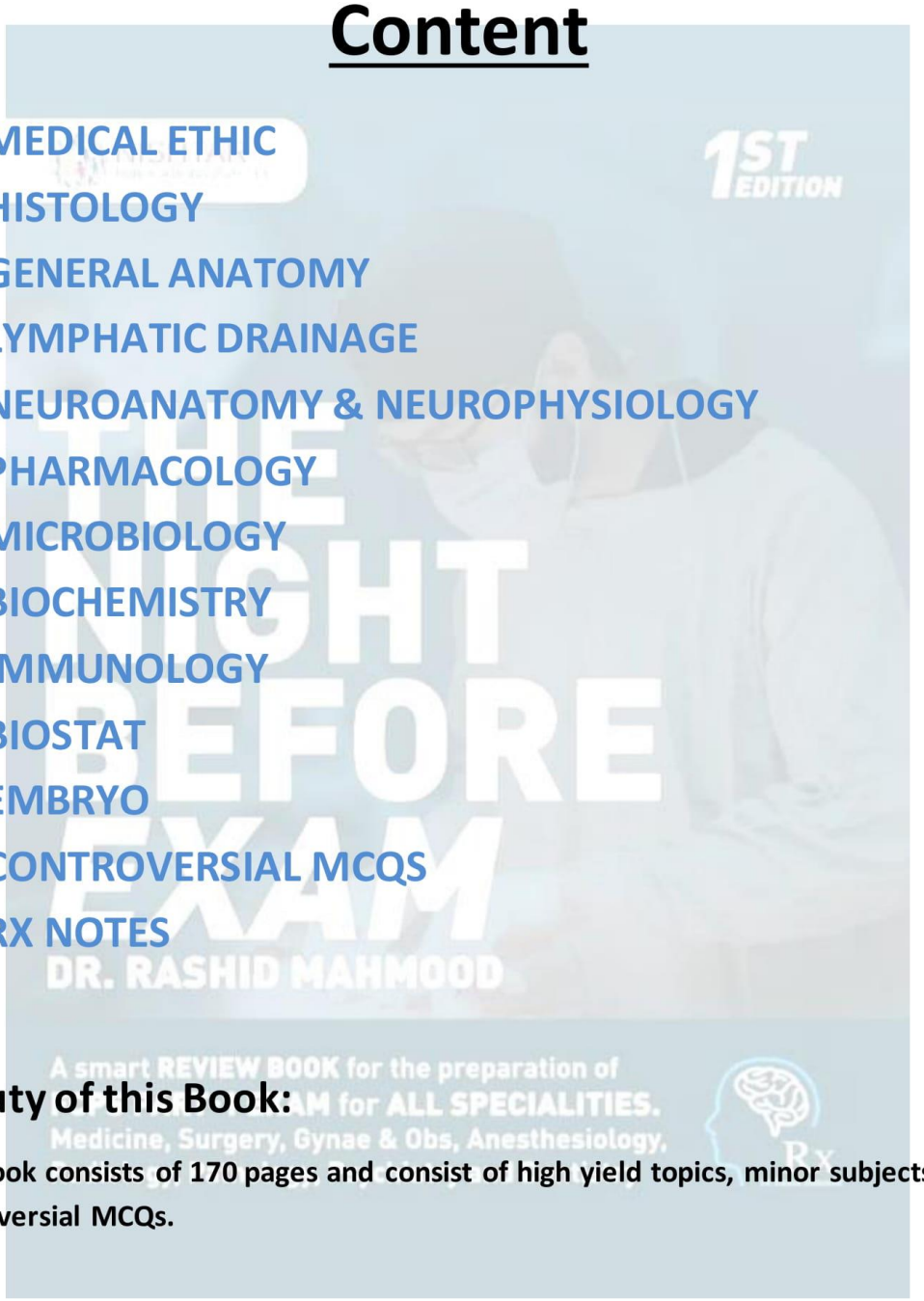


- MEDICAL ETHIC
- HISTOLOGY
- GENERAL ANATOMY
- LYMPHATIC DRAINAGE
- NEUROANATOMY & NEUROPHYSIOLOGY
- PHARMACOLOGY
- MICROBIOLOGY
- BIOCHEMISTRY
- IMMUNOLOGY
- BIOSTAT
- EMBRYO
- CONTROVERSIAL MCQS
- RX NOTES

Beauty of this Book:

This book consists of 170 pages and consist of high yield topics, minor subjects and controversial MCQs.

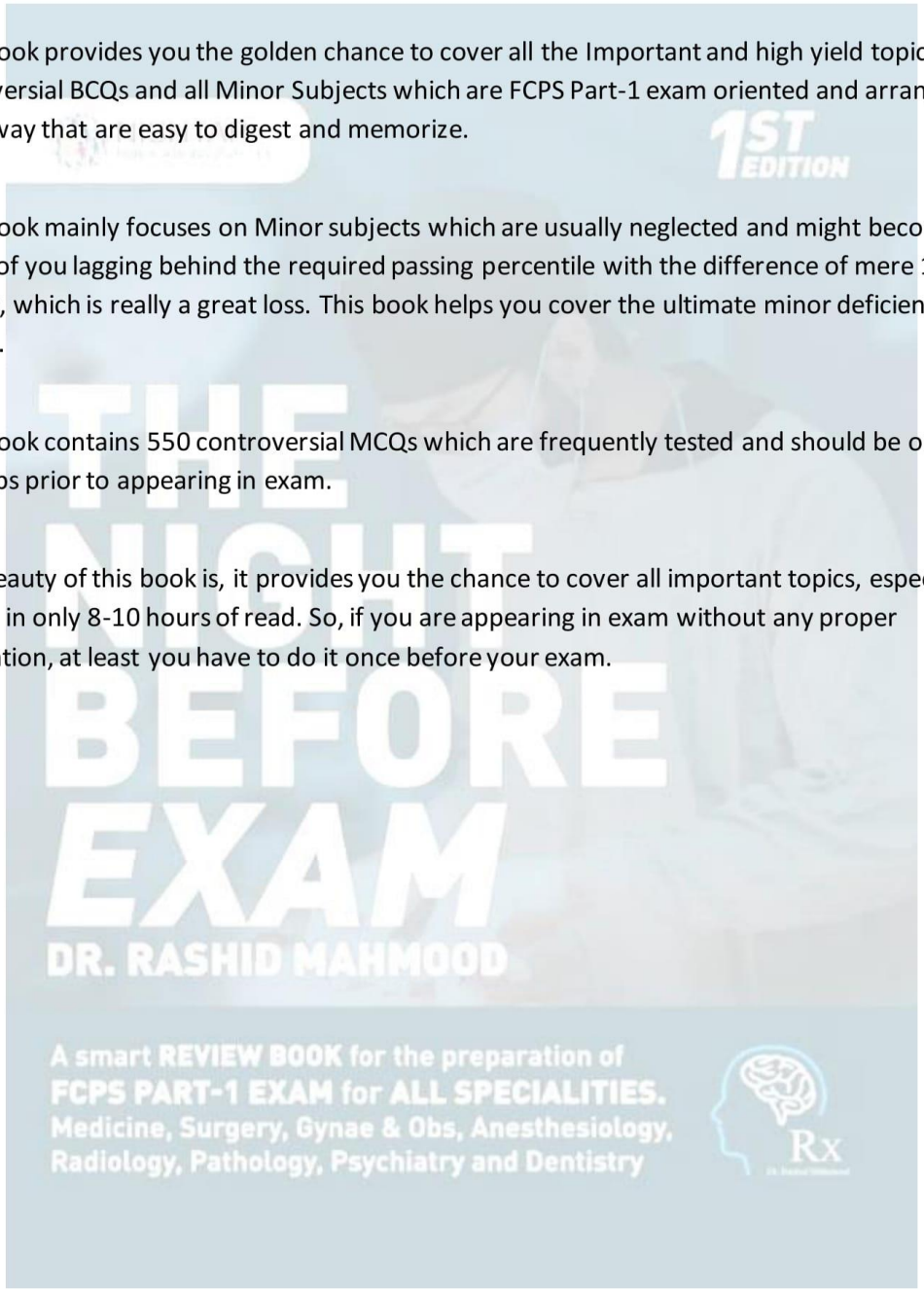
Why "The Night Before Exam"?

• This book provides you the golden chance to cover all the Important and high yield topics, Controversial BCQs and all Minor Subjects which are FCPS Part-1 exam oriented and arranged in such a way that are easy to digest and memorize.

• This book mainly focuses on Minor subjects which are usually neglected and might become the reason of you lagging behind the required passing percentile with the difference of mere 1 to 2 percent, which is really a great loss. This book helps you cover the ultimate minor deficiencies if present.

• This book contains 550 controversial MCQs which are frequently tested and should be on your fingertips prior to appearing in exam.

• The beauty of this book is, it provides you the chance to cover all important topics, especially Minors, in only 8-10 hours of read. So, if you are appearing in exam without any proper preparation, at least you have to do it once before your exam.



Posterior circulation

Anterior spinal artery: Medial medullary syndrome	
Corticospinal tract. Medial lemniscus. Caudal medulla—hypoglossal nerve	Contralateral paralysis—upper and lower limbs. Dec contralateral proprioception. Ipsilateral hypoglossal dysfunction (tongue deviates ipsilaterally)
AICA (Branch of Basilar Artery): Lateral pontine syndrome	
Lateral pons: Facial nucleus	**Paralysis of face** Dec lacrimation, salivation, taste from anterior 2/3 of tongue.
Vestibular nuclei	Vomiting, vertigo, nystagmus
Spinothalamic tract, spinal trigeminal nucleus	Dec pain and temperature sensation from contralateral body, ipsilateral face.
Sympathetic fibers	Ipsilateral Horner syndrome.
Middle and inferior cerebellar peduncles	Ipsilateral ataxia, dysmetria.
Labyrinthine artery	Ipsilateral **sensorineural deafness**, vertigo
PICA (Branch of vertebral Artery): Lateral medullary (Wallenberg) syndrome	
Lateral medulla: Nucleus Ambiguous (CN IX, X, XI)	**Dysphagia**, **hoarseness**, **Dec gag reflex**, hiccups.
Vestibular nuclei	Vomiting, vertigo, nystagmus
Spinothalamic tract, spinal trigeminal nucleus	Dec pain and temperature sensation from contralateral body, ipsilateral face.
Sympathetic fibers	Ipsilateral Horner syndrome.
Middle and inferior cerebellar peduncles	Ipsilateral ataxia, dysmetria.
Basilar artery: Locked-in syndrome	
Pons, medulla, lower midbrain	If RAS (Reticular activating system) spared, consciousness is preserved.
Ocular cranial nerve nuclei	**Quadriplegia** Loss of horizontal, but not vertical, eye movements
Posterior Cerebral artery	
Occipital lobe	Contralateral hemianopia with **macular sparing**; alexia without agraphia (dominant hemisphere

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Localization of lesion

- **Right Hemiplegia**, loss of proprioception on Left, **Tounge** deviated to Right = **ASA**
- **Facial paralysis on Right,** dec pain and temperature sensation from left side, and right face, right constricted pupil, ataxia, dysmetria. right **sensorineural deafness**, vertigo = **AICA**, branch of Basilar artery
- **Dysphagia, Horseness,** dec pain and temperature sensation from left side, and right face, right constricted pupil, ataxia, dysmetria, vertigo= **PICA**, branch of Vertebral artery
- **Quadriplegia**, loss of horizontal, but not vertical, eye movements = Locked in Syndrome (**Basilar Artery**)
- Right sided **motor** and **sensory** loss of upper limb and face + **Aphasia** = **Left MCA** (Dominant sphere)
- Left sided **motor** and **sensory** loss of upper limb and face + **Hemineglect** = **Right MCA** (Non-Dominant sphere)
- Right sided **motor** and **sensory** loss of lower limb + urinary **incontinence** = **ACA**
- Right sided **body weakness** upper and lower limb = **MCA** (Pure motor stroke due to involvement of Anterior 2/3rd of Posterior limb of Internal Capsule or Striatum)
- **Paralysis** + Facial lesion on **same** side of body of →UMN Lesion = **Uncrossed** hemiplegia (**internal** capsule)
- **Paralysis** + Facial lesion on **opposite** side of body of →UMN lesion = **Crossed** hemiplegia (**pons / brainstem**)
- Isolated **Sixth** cranial nerve palsy causes **Horizontal** Diplopia e.g when moving eye **left or right** or **reversing** the car.
- Isolated **Fourth** cranial nerve palsy causes **vertical** diplopia e.g **coming downstairs** or **Reading newspaper.**
- **Third** cranial nerve palsy leads to both **horizontal** and **vertical** diplopia
- Note **diplopia** on coming down-stairs is called **vertical** diplopia is present both in **4th and 3rd** Nerve palsy but **4th > 3rd**.
- All **horizontal** movements of eye are disturbed in leison of= **Pons** (**abducent** nerve)
- All **vertical** movements of eye are disturbed in leison of = **Midbrain** (**Oculomotor** nerve)
- Bilateral Pin point pupil= **Pons** (always think Pons First)
- Lesion on ant **2/3** of tongue = lesion in **facial** canal (cords tympani in facial canal)
- **Bell's** palsy = lesion in **stylomastoid** foramen (muscular branches here)
- **Right hemiplegia** with **right facial** nerve palsy = Lesion in **internal capsule**
- **Sensory loss** on left side face and left side body. Level of lesion = **Thalamus**
- Patient presents with **paralysed right arm and leg right** plantar up going and **exaggerated reflexes** lesion = **Left internal capsule**
- **Pacinian corpuscles** are numerous in = **Periarticular tissues**
- The rate of **regeneration** of peripheral nerves following injury Is **= 1-3 mm** per day

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Observational studies

Study type	Design	Measures/example
Cross-sectional study	**Frequency of disease and frequency of risk** related factors are assessed in the present. Asks, "What is happening?" A population to study like several middle aged or post menauposal women from karachi to check osteoporosis prevalence A. Cross sectional√ B. Case control C. Cohort D. Prospective	Disease prevalence. Can show **risk factor** association with disease, but does **not establish causality.**
Case-control study	Compares a group of people **with disease to a group without disease**. Looks to see if odds of prior exposure or risk factor differ by disease state. Asks, "What happened? A Group with disease and a group without tested for a risk factor A. Cohort B. Case control √ C. prospective cohort	Odds ratio (OR). Patients with COPD had higher odds of a smoking history than those without COPD
Cohort study	Compares a group with a given **exposure or risk factor to a group without such exposure.** Looks to see if exposure or risk factor is associated with later development of disease. Can be prospective or retrospective. Two groups one with CHD and associated risk factors is compared to another group with CHD but no associated risk factors what type of study? A. Case control B. Cohort√ C. Prospective D. Retrospective	Relative risk (RR). Smokers had a higher risk of developing COPD than nonsmokers. Coho**rt** = **r**ela**t**ive risk

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Pathology Section

Common cause of fatty liver in our country
A) Malnutrition ✓
B) Alcohol
C) Obesity
D) HTN

Malnutrition ➡️ inc fatty food ➡️ obesity

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A to Z Heart

- Left Posterior Aortic sinus → Left Coronary Artery
- Anterior Aortic Sinus → Right Coronary Artery
- Right Posterior Aortic Sinus → No vessel

- Coronary sinus drain → 2/3 venous blood
- Anterior cardiac Vein opens to → Right Atrium
- venae cordis minimae opens to → All 4 chambers

- Heart muscle work as synctium → Intercalated disc
- Impulse travels → Gap junctions
- Interclated disc made up of → Desmosomes

- Conducting system → Sub endocardium
- SA node → Subepicardium
- AV node → Endocardium
- Fastest conduction → Purkinje
- Slowest conduction → AV node

- Rt border → Right atrium
- Lt border → Left ventricle
- Inferior border → Right ventricle
- On xray Rt border → Right atrium plus SVC

- Sternocostal (Anterior) surface → Right ventricle
- Diaphragmatic surface → Left ventricle
- Base (Posterior) → Left atrium

- Most of the conducting system of heart supplied by → RCA with exception of RBB

- SA node, AV node → RCA
- Bundle of His, Purkinje system → RCA
- RBB → LCA
- LBB → LCA + RCA

- Anterior 2/3 of interventricular septum → LAD
- Posterior 1/3 of interventricular septum → PDA

- Epicardium blood supply → Coronary artery
- Pericardium blood supply → Pericardiophrenic artery

- Inferior wall → RMA branch of RCA
- Lateral wall → LCX branch of LCA
- Anterior wall → LAD branch of LCA
- Posterior wall → PDA branch of RCA
- Apex → LAD branch of LCA

- Moderator band is in → Right ventricle
- Artificial pacemaker is placed in → Moderator band present in Right Ventricle

Concept of Dominant heart

- In 70% people, PDA is given by RCA → Right dominant
- In 10% people, PDA is given by LCA → Left dominant
- In 20% both RCA and LCA form PDA → Co-Dominant Heart

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All about Malaria

- Most common non falciparum malaria is ➡ Plasmodium Vivax.
- Most common malaria in our country is ➡ Plasmodium Vivax.
- Malignant tertian malaria is caused by ➡ Plasmodium falciparum
- Benign tertian malaria (48 hours) is caused by ➡ ovale/vivax
- Quartan malaria (72 hours) caused by ➡ Plasmodium Malariae
- Quotidian malaria caused by ➡ Plasmodium falciparum.
- Quatidian also called Malignant Tertian
- Shortest pre-erythrocytic phase is seen in ➡ Plasmodium Falciparum.
- Longest pre-erythrocytic phase is in ➡ Plasmodium Malariae

- Anemia in malaria is ➡ Normocytic normochromic.
- Dormant phase of malaria ➡ Hypnozoite
- Malaria enter into human body as ➡Sporozoite
- Sporozoite divide in liver as ➡Merozoite
- Plasmodium Vivax and ovale has ➡ Hypnozoite stage.
- Species that cause relapse are ➡ vivax and ovale
- P falciparum & malariae ➡have no persistent exo-erythrocytic phase but recrudescence of fever may result.
- Splenectomy ➡increases the risk of severe malaria.
- Herpes Simplex is common in ➡ P vivax and P ocvale Malaria.
- Plasmodium malarie can lead to ➡ Nephrotic syndrome and Glomerulonephritis in children.
- Severe Malaria ➡ Parasite count >2% in any non-immune patient.
- Severe Malaria ➡ IV Artesunate (2.4mg/kg)

- Thick Blood Film ➡ Facilitates the Dx of low level Parasitaemias, species identification.
- Thin Blood Film➡ confirm the Dx
- Immunochromatograohic dipstick tests ➡ Plasmodium Falciparum Antigens

- DOC for Non-Falciparum Malaria ➡ Chloroquine
- DOC to kill Hypnozoites ➡ Primaquine
- Primaquine ➡ DOC for P vivax and P ovale
- DOC for Cerebral Malaria ➡ IV Artesunate
- Mefloquine ➡ Prophylactic agent in areas of Multiple Drug Resistant
- Contraindication in Pregnemcy ➡Artemether,Doxycycline

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Rx
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BCQs of Malaria

1. A Patient had lresented in COD with H/O unconciousness, fits high grade fever and dark colored urine for 1 day, CSF examination inremarkable diagnosis is
A. TBM
B. Pyomeningitis
C. Encephalitis
D. Cerebral Malaria✔

2. A child presented to OPD with 104 fever for last 4 days. He has been passing cola coloured urine for the last one day. He has been on antimalarials and his LFTs are deranged with increased unconjugated bilirubin. Diagnosis:
A. Drug induced jaundice
B. Black water fever
C. Paroxysmal nocturnal hemoglobinuria
D. Hemolytic uremic syndrome
E. G6PD ✔
Explanation:
⚜ If only fever and cola colored urine with other symptoms is mentioned it is blackwater fever caused by P. Falciparum.
⚜ If they mention fever and tell you that the pt was given antimalarial and then developed cola colored urine that's G6PD anemia.

3. Elderly Patient has history of high grade fever of 105F and dark urine, from last 3-4 days, then he suddenly collapsed. On labs, his Hb was 5g/dl. What is the diagnosis?
A. Meningitis
B. Cerebral Malaria✔

4. Quartan malaria is caused by ??
A. P Malaria✔
B. P falciparium
C. P ovale
D. P vivax
E. None

5. Quatidian malaria is caused by ??
A. P Malaria
B. P falciparium✔
C. P ovale
D. P vivax
E. None
Explanation: Quatidian also called Malignant Tertian

6. Maliganat tertian malaria is caused by ??
A. P Malaria
B. P falciparium✔
C. P ovale
D. P vivax
E. None

7. Tertian malaria is caused by ??
A. P Malaria
B. P falciparium
C. P ovale
D. P vivax ✔
E. None

Explanation...
- Quotidian fever👉daily spikes with no pattern
- Tertian fever👉 every 48 hours
- Quartan fever👉 every 72 hours

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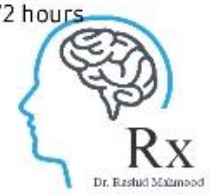

Sarcoidosis

1. Characteristic feature of sarcoidosis is
A. Erythema nodosum✔
B. Hepatic granuloma
C. Hypercalcemia

2. Characteristic feature of sarcoidosis in males
A. Hypercalcemia
B. Erethyma nodumaum✔

3. Characteristic feature of sarcoidosis In females
A. Hypercalcemia
B. Erythema nodusum✔

4. Sarcoidosis is diagnosed microscopically by
A. Non caseating granuloma✔
B. Granuloma with asteroid
C. Macrophages and giant cells

5. Case of sarcoidosis what will confirm the diagnosis
A. Granuloma with Asteriod
B. Non ceseting granuloma✔

6. Sarcoidosis is diagnosed histologically by
A. Granuloma with Asteriod
B. Non ceseting granuloma✔

Explanarion: Non caseating granuloma› Granuloma with asteroid. Non caseating granuloma is a general feature of sarcoidosis while characteristic stellate inclusions"asteriod bodies" often seen within giant cells of granulomas is histological feature. Presence of asteroid bodies is not important and non specific for the diagnosis as they may be present in granulomas of other origins too.

⚜The Hallmark of Acute Sarcoidosis is Non caseating Granulomas ➡ B/L Hilar lymphadenopathy ➡ Hypercalcemia or Erythema Nodusum in females

⚜Lungs Granuloma ➡ present in about 90%

⚜Skin lesion (Erythema nodosum) ➡ present in about 10 %
After Erythema Nodosum Cutanious menifestation of dermatologix sarcoidosis is Lupus pernio.

⚜Hypercalcemia only involves about 10% of the patients. And HyperCalciuria is seen in 50% patients.
Hypercalcemia due to vit D production by macrophages within granulomas

⚜ Arthritis in sarcoidosis involves mainly ankle joint.

⚜Eye involvement (Anterior Uveitis›Retinitis›Pars Planitis)
In japan greater than 70% have occular and in USA only 30% have occular menifestation.

⚜Liver Involvement is only seen in 20-30% of the patients.

⚜Increase ACE levels in 70% of patients during Active Disease
ACE levels used to moniter the disease

⚜On histoPathology ➡ Non Caseating epitheloid granuloma › Asteriod bodies

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Physiology Section

1. V/Q ratio in COPD is
A. zero
B. less than 1 ✓
C. 1
D. physiological Dead Space
E. infinite

2. Dead space increases in
A. Lung collapse
B. Pulmunary edema
C. Hypertension
D. Hypotension ✓
E. Atelectasis

3. Dead space decreases in
A. Lung collapse
B. Pulmunary edema
C. Hypertension
D. Hypotension
E. Atelectasis ✓

Explanation:
V/Q >1 or V/Q ratio high ➡ Dead space
V/Q <1 or V/Q ratio low ➡ Shunt
V/Q = 0 ➡ Shunt
Pulmonary embolism ➡ V/Q = ∞
Alveolar obstruction ➡ V/Q = 0

Increased Dead Space:
- Emphysema
- Pneumonia
- ARDS
- Smoking
- ETT intubation
- Bronchitis
- Asthma
- Cardiac Failure
- Pulmonary Embolism
- Neck Extension
- Standing
- Hypotension
- Bronchodilation

Decreased Dead Space:
- Atelectasis
- Tracheostomy
- Sleep
- Maxillectomy
- Hyperventilation
- Neck Flexion
- Supine Position
- Bronchoconstriction

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Epithelial Cell Junctions

1. The ECM and the cytoskeleton communicate across the cell membrane through which of the following?
A. Proteoglycans
B. Integrins ✓
C. Cadherins
D. Intermediate filaments
E. Microtubules

3. Which structure binds ICM to ECM.
A. Proteoglycans
B. Intermediate filaments ✓
C. Integrins

4. Cell to Cell adhesion, is due to
A. Proteoglycans
B. Intermediate filaments
C. Integrins
D. E-Cadherin ✓

5. Cells of simple columnar epithelium are connected by?
A. Tight junction, Adhering junctions, Gap junction
B. Tight junctions, Gap junction, Desmosomes ✓
C. Tight junction only
D. Desmosomes only

6. Which structure connects two epithelial cells?
A. Tight junction ✓
B. Desmosome
C. Gap junction
D. Tight junction

7. The regions between two adjacent cells that are physically attached at discrete locations along their membrane separated by about 20 nm with a dense accumulation of protein at the cytoplasmic surface of each membrane are:
A. Hemi desmosome
B. Adhering junction
C. Desmosome ✓
D. Fap junction
E. Tight junction

8. Which intercellular junction is like a spot weld between cell and the basement?
A. Hemi desmosome ✓
B. Adhering junction
C. Desmosome
D. Fap junction
E. Tight junction

In a nutshell

- Cell to Cell adhesion ➡ Cadherin
- Cell to Cell ➡ Desmosones
- Cell to Basement Membrane ➡ Hemidesmosomes
- Cell to ECM ➡ Integrin
- ICM to ECM ➡ Intermediate Filaments

- Which intermediate filaments present?
- In Mesenchyme/muscle connective cells ➡ Vimentin
- In muscle ➡ Desmin
- In Epithelial cells ➡ Keratin
- In Nuclear envelope ➡ Lamin

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Malignancy

⚜Change in shape is ➡ Dysplasia
⚜Change in type is ➡ Metaplasia
⚜Dysplasia ➡ Disordered cellular growth and Reversible
⚜Dysplasia➡ loss of polarity prefer that over pleomorphism
⚜Anaplasia ➡More advanced than dysplasia with loss of normal cellular structure and atypia, Irreversible

⚜Premalignant lesion➡Pleomorphism
⚜Premalignant condition➡N/C ratio
⚜Premalignant lesion Leukoplakia
⚜Premalignant lesion(lethal) Erythroplakia
⚜Premalignant Condition : Submucosal fibrosis
⚜Premalignant change : Lichen planus

⚜ Both Actinic keratosis and Bowen's disease leads to squamous cell carcinoma of skin but conversion rate of Bowen's disease is greater than Actinic keratosis.
⚜Bowen is common in ➡ penile region.
⚜Actinic keratosis on ➡ face, lips area.

⚜Malignancy➡Metastasis >Invasion >Leomorphism >N/C ratio
Microscopic feature in Malignancy ➡ Invasion

⚜Staging ➡ Remember as TNM staging
Tumour Size, Lymph nodes involvement and metastasis
⚜Grading is ➡ Degree of Differentiation or Anaplasia

⚜ Most aggressive tumor ➡ Melanoma
⚜ Locally malignant tumor ➡ Basal cell carcinoma

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Pigmentations & Calcifications

- Wear and tear pigment in the body called Lipochrome (Lipofuscin) formed as a result of Atrophy
- Dystrophic calcification means calcification in destroyed tissue with normal calcium level in the blood.

1. Dystrophic calcification is seen in:
A. Paget disease
B. Renal osteodystrophy
C. Atheroma✓
D. Milk-alkali

2. Which of the following is a common site for metastatic calcification?
A. Gastric mucosa
B. Kidney
C. Parathyroid
D. Lungs✓

3. Which of the following is not a common site for metastatic calcification?
A. Gastric mucosa
B. Kidney syndrome
C. Parathyroid ✓
D. Lung

4. Psammoma bodies show which type of calcification
A. Metastatic
B. Dystrophic✓
C. Secondary

5. Intracellular calcification begins in the
A. Mitochondria ✓
B. Endoplasmic reticulum
C. Golgi bodies

6. Brown atrophy is due to an accumulation of:
A. Melanin
B. Hemosiderin
C. Hematin
D. Lipofuscin✓

7. Which of the following pigments are involved in free radical injury?
A. Lipofuscin✓
B. Bilirubin

8. The following pigment is not derived from hemoglobin
A. Hemarin
B. Hemosiderin
C. Lipofuscin✓
D. Bilirubin

9. Lipofuscin, the golden yellow pigment is seen in heart muscle
A. Hypertrophy
B. Atrophy✓
C. Hyperplasia
D. Infarction

10. The patient with the following shows the maximum deposits of lipofuscin in:
A. Gaucher's disease
B. Tay Sach's disease
C. Acute enteric fever
D. Severe malnutrition✓

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Changes in Electrolytes

Extreme Repeats

⚜Hypermagnesemia ➡ Decreased Excitability
⚜Mild Hypomagnesemia ➡ Increased Neuronal Excitability
⚜Hypomagnesemia ➡ Decreased Excitability
⚜Hyperkalemia ➡ Hyperexcitability of Neurons
⚜Hypokalemia ➡ Decreased Excitability of Neurons
⚜Hyponatremia ➡ Small Peak of Action Potential
⚜Hypernatremia ➡ Large/Heighted Peak of Action Potential

Another Important concept

⚜Hypermagnesemia causes ➡ Hypocalcemia
(Mg Competes with Ca for absorption in nephrons)
⚜Mild hypomagesenia causes ➡ Hypercalcemia
(mild hypomagnesemia cause PTH to relaese)
⚜Severe hypomagnesemia causes ➡ Hypocalcemia
(severe hypomagnesemia inhibits PTH)

One more concept

⚜Acidosis is usually associated with Hyperkalemia
except in case of Renal Tubular Acidosis i.e. RTA type 1 & 2 is associated with acidois with hypokalemia.
⚜Alkalosis is usually associated with Hypokalemia.
(Hygrogen ions are exchanged with Intracellular K when H+ ions are increased or decresed)

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Urethral injuries

1. Rupture of membranous urethra urine leaks into
A. Deep perineal pouch✓
B. Superficial perineal pouch
C. Scrotum
D. Ant abdominal wall

2. Rupture of bulbar urethra urine leaks into
A. Deep perineal pouch
B. Superficial perineal pouch✓
C. Scrotum
D. Ant abdominal wall

3. Rupture of penile urethra urine leaks into
A. Deep perineal pouch
B. Superficial perineal pouch
C. Scrotum✓
D. Ant abdominal wall

4. A young man suffer injury to lacerate penile urethra. After perineum where else urine will be leaked
A. Deep perineal pouch
B. Superficial perineal pouch
C. Scrotum
D. Anterior abdominal wall✓

5. Patient present with scrotal swelling after injury. Contents of swelling extends upto abdomen but not thigh. Most common cause of this swelling is due to
A. Injury to bulbar part of urethra
B. Injury to penile uretha✓

6. Boy riding bicycle fall on road with rupture of penile urethra extravagate of urine occurs first in
A. Superficial perineal pouch
B. Deep perineal pouch
C. Scrotum✓

7. Urine does not go to thigh due to
A. Colles fascia
B. Scarpa fascia
C. Fascia lata ✓
D. Bucks fascia

8. Injury to Penile Urethra without rupture of Bucks Fasia result in
A. Penile swelling✓
B. Scrotal swelling
C. Abdominal swelling
D. Thigh swelling

9. Injury to penile urethra with rupture of urine may go to
A. Penile swelling
B. Scrotal swelling
C. Abdominal swelling
D. All of above ✓

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Golgi vs Spindle

1. Receptors in muscles which prevent their length to go beyond limits are:
A. Golgi tendon organ
B. Messener's corpuscles
C. Muscle spindles ✓
D. Pacinian corpuscles
E. Ruffini's end organ

2. Discharge from muscle spindles decrease when?
A. Muscle contract✓
B. When muscl spindle is stretched

3. In vigorous muscle contraction , damage to the muscle is protected by
A : Muscle spindle✓
B: Merkel disc
C: Golgi tendon organs
D: Pacinian

4. Book picked up some books in hand after adding one more book to his hand the boy's hand suddenly dropped all the books this is because of:
a. Withdrawal reflex
b. Inverse stretch reflex ✓
c. Crossed extensor reflex

5. Clasp knife reflex is due to
A. Exaggerated response of muscle spindle
B. Oversensitive Golgi tendon organs✓

Muscle spindles senses ➡ Change in muscle length
Muscle spindles causes ➡ Muscle contraction
(i.e. in Inverse Stretch reflex)

Golgi tendon organs senses ➡ Change in muscle Tension
Golgi tendon organs causes ➡ Muscle relaxation
(i.e in Patellar reflex)

Golgi "Tendon" "T"➡ controls "T"ension" of muscle.
Muscle Spind"L"e ➡ it controls "L"ength of mucle.

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Physiology Section

1. During exercise blood flow increases
A. zone 1
B. zone 1 & 2
C. zone 3
D. zone 2 & 3 ✓

2. During Exercise
A. zone 1 & 2 converted into zone 3
B. zone 2 converted into zone 3 ✓
C. zone 1 & 3 converted into zone 2
D. zone 2 & 3 converted into zone 1

3. While lying flat
A. zone 1 & 2 converted into zone 3
B. zone 2 converted into zone 3 ✓
C. zone 1 & 3 converted into zone 2
D. zone 2 & 3 converted into zone 1

Explanation: zone 1 do not exists normally, it is found in pathological conditions. so foregt zone 1 when talking about normal physiological conditions.
in normal physiological conditions two zone exists, zone 2 and zone 3

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Bowen vs Actinic

1. Which of the following has high chances of developing into cancer ?
A. Lymphocytoma
B. Pseudocancerous
C. Intraepithelial nevus
D. Bowen disease ✔

2. Most common predisposing factor for squamous cell carcinoma of Face ?
A. Marjolin ulcer
B. Actinic keratosis ✔
C. Bowen's disease
D. None

3. Most common predisposing factor which predisposes to squamous cell carcinoma
A. Bowen disease ✔
B. Leukoplakia
C. Lupus vulgaris
D. Marjolin ulcer
E. Senile keratosis

Explanation:
⚜ Both Actinic keratosis and Bowen's disease leads to squamous cell carcinoma of skin but conversion rate of Bowen's disease is greater than Actinic keratosis
⚜ Bowen is common in penile region.
⚜ Actinic keratosis on face, lips area.

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Physiology Section

1. Patient lying uncovered in OT, maximum Heat Loss by.
A. Conduction✓
B. Convection
C. Radiation
D. Evaporation

2.Patient in room with optimum enviromental conditions, how HEAT loss will occur
A. Conductions & Radiations✓
B. Convections
C. Sweating
D. Breathing
E. Voiding

3. Person naked in room, Temp 21°C, humidity present, HEAT loss will occur by.
A. Insensible perspirations
B. Sweating
C. Condutions & Radiations✓
D. Urination

4. Patient in OT, dressed heat is lost by
A. Conductions & Radiations✓
B. Convections
C. Sweating
D. Breathing

5. Loss of water by evaporation and insensible loss from body
A. Controlled by hypothalamus
B. Thermal gradient
C. Remains constant
D. Depends on core body temperature ✓

Explanation:
- Person in contact with surface = Conduction
- Humidity mention = Convection
- Temperature mention = Radiation + Conduction
- Endotracheal intubation = Evaporation

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Forces in Membrane

1. Integral proteins in cell membrane are joined by
A. Covalent
B. Ionic
C. Covalent + Hydrophobic
D. Hydrogen+Hydrophobic ✓

2. What kind of bond present between protein and lipids in a membrane
A. Hydrophobic only
B. Hydrogen bond only
C. Covalent and hydrophobic
D. Hydrogen and hydrophobic bonds✓

3. Integral proteins in cell membrane are joined to lipids of membrane by ?
A. Covalent and Hydrophobic bonds
B. Covalent bonds
C. Ionic bonds
D. Hydrophobic bonds✓

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Vascular Physiology

1. Venous pressure increased 8mmhg, what will be the effect on capillary pressure?
A. Increase by 8mm ✓
B. Increase markedly
C. Decrease by 6 mm
D. No change
Explanation: Till 20mmHg pressure inc. in veins, capillary pressure rises equally.

2. When radius of resistance vessel is inc, which of following will increase
A. Capillary blood flow✓
B. Central venous pressure
C. Radius of resistance vessels
D. Mean blood pressure

Explanation: when radius increases more blood will rush into capillaries, so blood flow increases)
3. When viscosity of blood is increased which of following will increase
A. Capillary blood flow
B. Central venous pressure
C. Radius of resistance veseels
D. mean blood pressure✓

Explanation: increased viscosity increase TPR.. resistance Increases mean arterial pressure increases)
A. Pressure is dissipated at
B. Arterioles to capillaries
C. Arteries to arterioles ✓
D. Capillaries to venules
Explanation: Arterioles are main resistance vessels in the body. Main pressure drops in arterioles.

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Physiology Section

1. Highest diffusing capacity across respiratory membrane and in body fluids is
A. Helium
B. Carbon monooxide
C. Carbon dioxide✔
D. Nitrogen
E. Oxygen

(Diffusing capacity is in this order CO2 ➡ O2 ➡ CO)

2. Gas used to measure diffusing capacity
A. Helium
B. Carbon monooxide✔
C. Carbon dioxide
D. Nitrogen
E. Oxygen

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Physiology Section

1. 3rd space fluid loss should be replaced by
A. Blood,plasma
B. 10%dextrose
C. Ringers lactate ✓
D.Hypertonic saline
E. Normal saline

2. 10-15% blood loss should be replaced by
A. Whole blood
B. Three times normal saline
C. Ringers lactate✓
D. 5%dextrose
E. Normal saline

Explanation:
- 15 percent blood loss is tolerable and replace with ringer.
- Less than 10 % no need of iv fluids as veins has reservior.

Moreover, Ringer is prefered over Normal saline because constituents of ringers is similar to blood.

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Gastrectomy

⚜ Partial Gastrectomy ➡ Iron deficiency anemia
⚜ Total Gastrectomy ➡ Pernicious anemia

⚜ If only Gastrectomy mentioned ➡ Perniciuous anemia

⚜ Gastrectomy with less than 6 months ➡ Iron Deficiency Anemia
Explanation:There us marked decrease in the production of gastric acid. This acid is necessary to convert dietary iron to a form that is more readily absorbed in the duodenum.

⚜ Gastrectomy with greater than 6 months ➡ Perniciuous anemia
Explanation: Vit b12 stores take time to b defficient in body

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GFR RENAL PHYSIOLOGY

1. For a substance X GFR 125 mg/ml, Tm 125 mg/min , plasma conc is 200mg/100ml, what will be the filtration , resroption and excretion of substance X ?

A) 250 filtration , 125 reabsorption , and 125 excretion
B) 125 filtration , 125 reabsorption , and 0 excretion ✓
C) 200 filtration , 125 reabsorption , and 75 excretion

Explanation:
GFR means Filteration ➡ 125
Tm means Maximum Absorption Capacity ➡ 125
As Filteration is equal to Absorption so Excretion ➡ 0

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Physiology Section

1. Best way to measure GFR ?
a: inulin ✓
b: Creatinine
C: Creatinine Clearance

2. Best way to measure GFR Clinically?
a: PAH
b: inulin
c: Creatinine Clearance ✓

3. Best way to estimate GFR?
a: Creatinine Clearance ✓
b: PAH
C: Inulin

4. Best way to measure renal plasma/blood flow
a: Creatinine
b: PAH ✓
c: inulin

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Biochemistry Section

Hypoglycemia increases?
A. Ssk
B. Somatostatin
C. Gastrin ✓
D. VIP
E. Secretin

Explanation..
Glucagon is chief hormone of starvation or hypoglycemic state .Where as insulin is hormone of feed or hyperglycemia state.
Gastrin stimulate glucagon secretion where as secretin inhibits glucagon secretion.

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insulin & Glucose

1. Insulin independent uptake of glucose in
A. Smooth muscle
B. Myocardium
C. Hypothalamus ✓
D. Skeletal muscle

2. Insulin independent uptake of glucose in
A. Exercising muscle✓
B. Myocardium
C. Adipose tissue
D. Skeletal muscle

3. Insulin dependent uptake of glucose into
A. Exercising muscle
B. Myocardium
C. Hypothalamus
D. Skeletal muscle✓

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Biochemistry Section

1. Insulin independent uptake in
A. muscle
B.myocardium
C.hypothalamus ✓
D skeletal muscle

2. Insulin dependent uptake of glucose into
A exercising muscle
B myocardium
C hypothalamus
D skeletal muscle✓

Some important points:

GLUT-4 (insulin dependent found in Skeletal Muscles and Adipose Tissues)

BRICK LIPS (insulin independant glucose intake)
Brain, RBCs, Intestine, Cornea, Kidney, Liver, Islets, Placenta, Spermatocytes

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Nerves Muscles Bones

Extreme Repeats

⚜ Most frequently fractured bone of body: Clavicle
⚜Most frequently dislocated carpal bone: Lunate
⚜Most frequently fractured carpal bone:Scaphoid
⚜Osseous structure palpated deep to "Anatomical Snuff Box": Scaphoid
⚜Nerve injured with fracture of surgical neck of humerus: Axillary
⚜Nerve injured with fracture of shaft of humerus: Radial
⚜Nerve injured that results in wrist drop: Radial
⚜Nerve injured with fracture of medial humeral epicondyle: Ulnar
⚜Muscle that is the chief flexor and chief extensor at shoulder joint: Deltoid
⚜Muscles innervated by axillary nerve: Deltoid and Teres Minor
⚜Most commonly torn tendon of rotator cuff: Supraspinatus
⚜Tendon that courses through shoulder joint: Long head of biceps
⚜Chief supinator muscle of hand: Biceps brachii
⚜Primary (major) flexor of the forearm: Brachialis
⚜Fracture of distal radius that produces "Dinner Fork" appearance: Colles' fracture
⚜Two muscles that rotate scapula for full abduction of arm: Trapezius and Serratus Anterior

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Physiology Section

In right shift of oxygen dissociation curve, the most likely value of P50 would be
A. 20
B. 18
C. 26
D. 36 ✓

Explanation: P50 is the oxygen tension when hemoglobin is 50 % saturated with oxygen i.e. 26.7 mmHg
In right sift, oxygen affinity decreases to bind with Hb, so more amount of oxygen will be required to saturate 50% of Hb (more than normal value i.e 37) While in Left shift, oxygen affinity increases with Hb so less amount of oxygen required to saturate 50% of Hb (less than normal value i.e 17 mmHg)

For remembering, i am going to approximate these values

Normal value of p50 ➡️ 26.7 = 27mmHg
In left shift ➡️ 17mmHg
In Right shift ➡️ 37mmHg

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Thalacemia & Hemolysis

1. Young female with low MCV and MCH but normal Fe and TIBC, most likely test to make
Diagnosis?
A. bone marrow aspiration
B. Hb A2 ✓
C. Retic count

Explanation: Microcytic Anemia With normal Iron studies (Serum Iron, TIBC, Ferritin etc) = Thalassemia.
Hb electropheresisis the Next best Investigation.

some Important points about Hemolysis

Acute Intravascular hemolysis
Decreased Haptoglobin > Hemoglobenemia > Hemoglobinuria > Reticulocytosis.

Chronic Intravascular Hemolysis
Hemoglobinuria > Hemosidrinuria > Decreased Haptoglobin

Only intravascular hemolysis mentioned
Decreased Haptoglobin > Hemoglobenemia > Hemoglobinuria > Hemosiderinuria>Reticulocytosis

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Odds Ratio vs Relative Risk

Of 20 women with neonates getting Tetanus, 19 had not taken Tetanus Toxoid during pregnancy

Of 40 women with neonates not getting Tetanus, 30 had taken 2 Tetanus Toxoid during pregnancy

	Tetanus	Healthy
Vaccinated women	1 (a)	30 (b)
Non Vaccinated women	19 (c)	10 (d)
	20	40

Odds Ratio = ad/bc = 10/570 = 0.017 or 1.7 %

Relative Risk = (a/a+b) / (c/c+d) = 0.049 or 4.9 %

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Defecation reflex

Defecation is Mainly Carried Out By?
A. Mass movement
B. Sacral Parasympathetic ✔

Mainly carried out by 👉 Parasympathetic
Initiated by 👉 Mass movement.

1. The defecation reflex starts when the muscles in the colon contract to move stool toward the rectum which is called "Mass movement." The myenteric defecation reflex is responsible for increasing peristalsis and propelling stool toward the rectum.. This eventually signals the internal anal sphincter to relax and reduce sphincter constriction.
2. When enough stool moves to the rectum, the amount of stool causes the tissues in the rectum to stretch or distend.Most important reflex is Rectoanal inhibitory reflex is an involuntary internal anal sphincter relaxation in response to rectal distention
3. Inside these tissues are special stretch receptors that signal the brain when they are stretched.
The reflex triggers the two main sphincters around the anal canal..
👉First is the internal anal sphincter which is involuntary..
👉Second is the external anal sphincter which is relatively voluntary.

The defecation reflex occurs when the internal anal sphincter relaxes and the external anal sphincter contracts..
The second type of defecation reflex is the parasympathetic defecation reflex, a person can voluntarily control the parasympathetic defecation reflex, but they can't control the myenteric one..

After the defecation reflex is triggered, you can either delay or defecate.

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Physiology Section

Which organ has highest arteriovenous difference
a. Heart ✓
b. Lungs
c. Liver
d. Kidney

Explanation: Heart draws maximum oxygen from blood creating highest AV difference. So
Heart has highest difference while Kidney has least.

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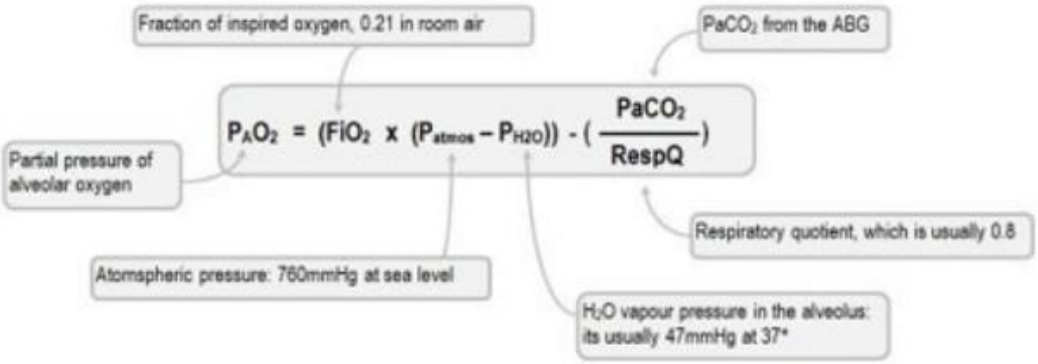
Alveolar Gas Equation

At sea level P_AO_2 is 48mmHg, P_AO2 level will be

A. 100mmHg
B. 150mmHg
C. 90mmHg ✓
D. 60mmHg

According to Alveolar Gas Equation



For atmospheric pressure equation will become

$P_AO_2 = 150 - PaCO_2 / 0.8$

= 150- 48/0.8

=150- 60

=90mmHg

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Blood Transfusion BCQs

		DONER							
		O-	O+	A-	A+	B-	B+	AB-	AB+
RECIPIENT	O-	✓	×	×	×	×	×	×	×
	O+	✓	✓	×	×	×	×	×	×
	A-	✓	×	✓	×	×	×	×	×
	A+	✓	✓	✓	✓	×	×	×	×
	B-	✓	×	×	×	✓	×	×	×
	B+	✓	✓	×	×	✓	✓	×	×
	AB-	✓	×	✓	×	✓	×	✓	×
	AB+	✓	✓	✓	✓	✓	✓	✓	✓

1. A young woman in the labor room requires blood Transfusion. Her blood samples sent to the laboratory for "group & cross match". The laboratory technician reports That "her red cells are agglutinated by antisera - A & D While her serum is agglutinating B cells". The most suitable Blood donor for her would be?

A. Blood group A negative
B. Blood group A positive ✔
C. Blood group AB positive
D. Blood group 0 negative
E. Blood group 0 positive

Explanation:

- ABO BLOOD GROUP: If the patient's blood is agglutinated by antibodies (antibodies are also called antisera) A, it means that the patient's blood contains antigen A. A person having antigen A will have blood group A.
- Rh BLOOD GROUP: If the patient's blood is agglutinated by antibody D (Rh antigen), it means that the patient has Rh antigen (Rh factor D). A person having Rh antigen is Rh positive.

2. Severe transfusion reaction occurs when A+ blood is given to

A. A-
B. AB-
C. O- ✔

Explanation: C > B

3. Transfusion reaction will not occur in a patient if we transfuse the

A. Group A with O
B. Group A with AB
C. Group AB with A ✔
D. Group B with O
E. Group O with B

4. Blood group antigens are?

A. Present on cell membrane
B. Present on RBC surface ✔
C. Glycoproteins
D. Equally immunogenic

Explanation: Blood group antigen are present on RBC surface>glycoprotein>equally immunogenic

5. True about ABO blood group antigen except

A. Found on RBC membrane
B. Glycoprotein in nature
C. Highly immunogenic
D. Autosomal recessive inheritance ✔

6. A blood transfusion was started on a stable post-operative patient. Within 2 minutes she became dyspneic collapsed and died. Most likely cause of death is

A. ABO incompatibility ✔
B. Rh incompatibility
C. Blood transfusion reaction
D. Hypercalcemia
E. Hypovolemia

Explanation: A > C

7. Repeated blood transfusion in an individual will cause

A. Haemochromatosis of liver ✔
B. Hypocalcemia
C. Hemoglobinuria
D. Transfusion reaction

<u>These three points must be on your finger tips</u>

1. **Massive** transfusion ☞ Hyperkalemia
2. **Repeated** Transfusions ☞ Hypocalcemia
3. **Multiple** (Thalassemia) ☞ Hemochromatosis

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Embryology

Development of Gonads

The indifferent gonad begins development in a column of intermediate mesoderm called the urogenital ridge during week 4. Primordial germ cells arise in the wall of the yolk sac and migrate to the indifferent gonad.

- Gametes i.e. Oocytes and Spermatozoa are descendants of primordial germ cells that originate in the wall of the yolk sac.
- Primordial germ cells are derived from **epiblast**, during the process of **gastrulation** and migrate to the wall of **yolk sac.**
- This migration is in the **4th week** and arrival to the gonads is at the **end of 5th week**
- In females **Oogenesis** begins **before birth** while in males the **spermatogenesis** begins at **Puberty**.

In the male, a testis develops from the indifferent gonad due to the presence of testis-determining factor (TDF), which is produced by **Sry gene** on the short arm of the Y chromosome. Testosterone secreted by the Leydig cells and Müllerian-inhibiting factor (MIF) secreted by the Sertoli cells also contribute to the development of the genital system.
In the female, development of the **ovary and female reproductive system** requires estrogen. Ovarian development occurs in the absence of the Sry gene and in the presence of the WNT4 gene.

- **Mesonephric (Wolffian) contributes to** Male genital tracts
- **Paramesonephric (Mullerian) contributes to** Female genital tracts

Oogenesis

At **week 4**, primordial germ cells arrive in the indifferent gonad and differentiate into oogonia. Oogonia enter meiosis I to form primary oocytes. All primary oocytes are formed by **month 5 of fetal life**; they are arrested the first time in **prophase (diplotene) of meiosis** I and remain arrested until puberty.
• Primary oocytes arrested in meiosis I are present at birth.
• When a girl reaches puberty, during each monthly cycle a primary oocyte becomes unarrested and completes meiosis I to form a secondary oocyte and polar body.
• The **secondary oocyte** becomes arrested the second time **in metaphase of meiosis II** and is **ovulated**.
• At fertilization within the uterine tube, the secondary oocyte completes meiosis II to form a mature oocyte and polar body. Meiosis II is completed only if there is fertilization.
• At 5 month of intrauterine life there are 7 million eggs Maximum in number
• Oocyte present in ovary at birth are 4 lakhs
• Zona pellucida is seen in primary follicle

Spermatogenesis

At week 4, primordial germ cells arrive in the indifferent gonad and remain dormant until puberty.
• When a boy reaches puberty, primordial germ cells differentiate into type A spermatogonia, which serve as stem cells throughout adult life.
• Some type A spermatogonia differentiate into type B spermatogonia.
• Type B spermatogonia enter meiosis I to form primary spermatocytes.
• Primary spermatocytes form 2 secondary spermatocytes.
• Secondary spermatocytes enter meiosis II to form 2 spermatids.
• Spermatids undergo spermiogenesis, which is a series of morphological changes resulting in the mature spermatozoa.

- Primordial germ cells differentiate into type A spermatogonia
- Type A spermatogonia – differentiate into type B spermatogonia
- **Type B spermatogonia – enter meiosis-I** and undergo DNA replication to form primary spermatocytes.
- Primary spermatocytes complete **meiosis-I** to form two **secondary spermatocytes**
- Secondary spermatocytes complete **meiosis-II** to form four **spermatids**

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Embryology

1st week

Fertilization

- During fertilization the spermatozoon must penetrate
  1. Corona Radiata
  2. **Zona pellucida** (this layer becomes impermeable to other spermatozoa; this is **Cortical Reaction**)
  3. Oocyte cell membrane
- The ovum that is released during fertilization is **Secondary Oocyte.**
- **Cleavage**: a series of mitotic divisions of the zygote. There is increase in the number of smaller cells called Blastomeres.
- **Blastomeres** are the Totipotent upto **8-cell stage**.
- **Compaction**: blastomeres undergoes compaction and forms a ball of cells with inner and outer cells

Morula

- Compact ball of cells forms a **16-cell structure called morula**.
- Morula on **3rds of 4th day**, will enter into the **uterine cavity.**
- Morula is usually **32-cell stage.**

Blastula / Blastocyst

When Morula enters into the uterine cavity, here two main changes occur.

1. A cavity appears when fluid secreted within the morula, it forms the **blastocyst cavity** and the morula changes its name to blastocyst.
2. The inner and outer cell masses appear.
   - The **inner** cell mass – produce **Embryo**
   - The **outer** cell mass- produce extra –embryonic tissue like **Trophoblast**

Implantation

- Implantation is mainly at **day 7**
- The **zona pellucida degenerates** and blastocyst implants within the **Functional Layer** of the endometrium.
- Embryo is at **Blastocyst** stage during implantation.
- The uterus at the time of implanting is in **secretory phase**.
- For implantation to occur, the **zona pellucida must degenerate.** The blastocyst usually implants within the **posterior wall of the uterus**. The embryonic pole of blastocyst implants first.
- The blastocyst is more deeply embedded in the endometrium, and the penetration defect in the surface epithelium is closed by a **Fibrin Coagulum.**

2nd Week

Two Cell layers

1. **Embryoblast**: cells differentiate into
   - Epiblast= high columnar cells
   - Hypoblast= small cuboidal cells

2. **Trophoblast:** cells differentiates into
   - Mono-nucleated cells= Cytotrophoblasts
   - Multi-nucleated cells = Syncytiotrophoblast
   - he syncytiotrophoblast continues its growth into the endometrium to make contact with endometrial blood vessels and glands. No mitosis occurs in the syncytiotrophoblast. The cytotrophoblast is mitotically active.

Two Cavities

1. **Amniotic cavity**- small cavity Within the epiblast
2. **Exo-coelomic cavity**- Primitive yolk sac

Amniotic cavity: Cells of the inner cell mass or embryoblast also differentiate into two layers.

(1) A layer of small cuboidal cells adjacent to the blastocyst cavity, known as the **Hypoblast layer.**

(2) A layer of high columnar cells adjacent to the amniotic cavity, the **Epiblast layer.** A small cavity appears within the epiblast. This cavity enlarges to become the **Amniotic cavity.**

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Embryology

Ultrasound provide an accurate (1 to 2 days) measurement of CRL during the 7th to 14th weeks. Measurements commonly used in the 16th to 30th weeks are **biparietal diameter (BPD)**, head and abdominal circumference, and femur length

- By the 12th week, external genitalia develop to such a degree that the **sex of the fetus** can be determined by external examination (ultrasound)
- Sex of fetus= by the end of 12th week
- CRL = 7th to 14th week
- BPD = 16th to 30th week

Diaphragm

The **diaphragm** divides the body cavity into the thoracic and peritoneal cavities. It develops
from four components:
(1) septum transversum (central tendon)
(2) pleuroperitoneal membranes
(3) dorsal mesentery of the esophagus
(4) muscular components from somites at cervical levels three to five (C3–5) of the body wall.
Congenital diaphragmatic hernias involving a defect of the pleuroperitoneal membrane on the left side occur frequently.

Placenta

- At full term, the placenta is discoid with a diameter of 15 to 25 cm, is approximately 3 cm thick, and weighs about 500 to 600 g.
- When the placenta is viewed from the maternal side, 15 to 20 slightly bulging areas, the cotyledons, covered by a thin layer of decidua basalis.
- The fetal surface of the placenta is covered entirely by the chorionic plate. A number of large arteries and veins, the chorionic vessels, converge toward the umbilical cord.

The **placenta** consists of two components:

- Fetal portion, derived from the **chorion frondosum** or **villous chorion**.
- Maternal portion, derived from the **decidua basalis**.

Two thirds of twins are **dizygotic**, or **fraternal**; they have two amnions, two chorions, and two placentas, which sometimes are fused. **Monozygotic twins** usually have two amnions, one chorion, and one placenta.

Haemodynamic In The Feto-Placental Circulation

- Fetal blood flow through placenta → 400 mL/min
- Oxygen Saturation in in the umbilical artery → 60%
- Oxygen Saturation in in the **umbilical Vein 70-80%** (highest oxygen in fetus)

Physiological Herniation

- Start= 6th week
- Returns= 10th week
- Axis is along SMA
- Counter clock wise
- Total= 270° (90° during herniation, 180° while returning)
- Coiling of the small intestinal loops and formation of the cecum occur during the herniation.

Teratogens

Week 3 to 8 is embryogenesis and cells are liable to the effects of teratogens.

- Synthetic estrogen, **Diethylstilbestrol (DES)**, which was used to prevent abortion. In female embryos it raised the incidence of clear cell carcinomas of the vagina and cervix and malformation of the uterus, uterine tubes, and upper vagina. Male embryos exposed in utero increase in malformations of the testes and abnormal sperm. In contrast to women, however, men do not demonstrate an increased risk of developing carcinomas of the genital system.
- **Maternal diabetes** Various malformations; heart and neural tube defects most common.
- **Thalidomide**: Limb defects, heart malformations
- **X-rays**: Microcephaly, spina bifida, cleft palate, limb defects
- **Rubella** (German measles): Cataracts, glaucoma, heart defects, hearing loss, tooth abnormalities
- **SSRIs & Lithium**: Heart malformations
  Warfarin: Skeletal abnormalities nasal hypoplasia, stippled epiphyses
- **ACE inhibitors**: Growth retardation, fetal death

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Ethics

- Medical Ethics is study of = **Moral of conduct of doctors' professional life**.
- In Behavioral Sciences the Bio-Psycho-Social (**BPS**) model of health care is best described as = **Use of social and psychological factors alongside the biological aspects of the illness.**
- Patient autonomy grants every competent adult patient the absolute right to do what he wishes with his own health car.
- The moral aspect of doctor's professional life: **Ethics**
- The **Foremost** part of Hippocratic Oath is: **Confidentiality**
- Professionalism of a doctor is judged by = **Punctuality**
- A doctor can breach confidentiality only= **If the patient allows**
- A doctor can breach confidentiality only if **patient has HIV or STDs** because these conditions can harm a third person.
- Regarding "**Misconception**" = **to remove myths about disease**
- **Sick** is defined as= **Feeling of unwell as perceived by patient**
- More **chances of suicidal** attempts seen in = **Depression** not psychosis
- Technique used to treat **phobias** =**Systemic desensitization**
- **Doctor Patient relationship**, first and foremost is = **Mutual trust**
- **Denial** is the first stage of **defense mechanism against against some bad news**
- In our society female death apart from obstetrical death. = **Domestic violence**
- A doctor provides better management to patient= **By better communication**
- **Breaking bad news** = should be told to patient in a **formal session exclusively** > **crispy and acceptable way**
- **Breaking bad news**= in doctor's office, in a formal session, in environment of exclusively
- **Best approach to the patient** should be = starting the conversation by **asking his name age** etc.
- In order to **avoid complications** while procedure is possible by= increasing professional competence.
- A diabetic man comes to your office, saying that he is having problem in bed with his wife. Next step taken by physician is = **Counsel the patient that it's common in diabetes**
- Doctor is recognized by = **Politeness and good bedside manner**
- **Small gifts from the patient of nominal or modes value are acceptable** but not if the patient expect an extra or different prescription for something in exchange for gifts.
- To prevent the complication of a procedure/intervention= **Doctor should not cross his competency level**.
- **Referral** system means = **Sending patient to a better higher facility**
- **Referral** system should be for = **Better management of patient**
- When a there are two options to a treatment, **go with one the patient wants**.
- An adult patient in a medical ward may start to **insist to be examined by one particular doctor**, feels that the same doctor comes to his bed first and wants to spend longer time in the company of the same doctor. The doctor, on account of his physical appearance, mannerism, or personality qualities, reminds the patient of his or her father. This is can be explained by the phenomenon of = **Transference**

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Hypersensitivity Reactions

Type I hypersensitivity

- **Antigen** crosslinks preformed **IgE** on presensitized mast cells
- Anaphylactic and atopic—two phases:
  - **Immediate** (minutes): Histamine
  - **Late** (hours): Chemokines, Leukotrienes
- **Test**: Skin test or Blood test **(ELISA) for allergen specific IgE**.
- Example: **Anaphylaxis** (eg, food, drug, or bee sting allergies, **Allergic asthma**

Type III hypersensitivity

Immune complex—antigen-antibody (mostly IgG) Complexes activate complement

Examples:

- **SLE**
- **Polyarteritis nodosa**
- **Poststreptococcal glomerulonephritis**
- **Serum sickness**—Antibodies to foreign proteins are produced and **1–2 weeks later**. Serum sickness-like reactions are associated with
  - **Drugs** (may act as Haptens, eg, Penicillin)
  - **Infections** (eg, Hepatitis B)
- **Arthus reaction**—a local **Subacute** immune complex-mediated hypersensitivity reaction. Intradermal injection of antigen into a pre-sensitized (has circulating IgG) individual leads to immune complex formation in the skin (eg, **enhanced local reaction to a booster vaccination**).

Type II hypersensitivity

- Antibodies bind to cell-surface antigens
- **Direct** Coombs test—detects antibodies attached **direct**ly to the RBC surface
- **Indirect** Coombs test—detects presence of unbound antibodies in the serum

Examples-Cellular destruction

- Autoimmune-hemolytic anemia
- Immune thrombocytopenia
- Transfusion reactions
- Hemolytic disease of the newborn

Examples-Inflammation

- Goodpasture syndrome
- Rheumatic fever
- Hyperacute transplant rejection

Examples-Cellular dysfunction

- Myasthenia gravis
- Graves disease
- Pemphigus vulgaris

Type IV hypersensitivity

- Two mechanisms, each involving T cells
  - **Direct cell cytotoxicity**: CD8+ cytotoxic T cells kill targeted cells.
  - **Inflammatory reaction**: effector CD4+ T cells recognize antigen and release inflammation-inducing cytokines

  Examples:
  - **Contact dermatitis** (eg, Poison Ivy, Nickel allergy)
  - **Graft-versus-host disease**
- **Tests**: PPD for **TB** infection; **patch test** for contact dermatitis, ***Candida* skin** test for T cell immune function.
- 4**T**'s: **T** cells, **T**ransplant rejections, **TB** skin tests, **T**ouching (contact dermatitis).
- **Fourth** (type) and **last** (delayed)

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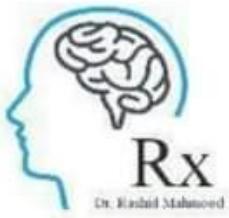

Immunodeficiency Disorders

B-cell disorders

Bruton Agammaglobulinemia

- Defect in **BTK**, a tyrosine kinase gene > no B-cell maturation
- **X-linked recessive** (high in **Boys**)
- Recurrent **bacterial and enteroviral** infections **after 6 months** (dec maternal IgG)
- **Absent B cells in peripheral blood**, **dec Ig of all classes**.
- Absent/scanty lymph nodes and tonsils (1° follicles and germinal centers absent)
- Live vaccines contraindicated

Selective IgA deficiency

- Most common **1° immunodeficiency**
- Majority Asymptomatic. **Airway and GI infections**
- **Dec IgA** with **normal IgG, IgM** levels
- Inc susceptibility to **Giardiasis**
- Can cause false-positive β-hCG test

Common variable immunodeficiency

- Defect in B-cell differentiation.
- May present in childhood but usually diagnosed **after puberty**
- Inc risk of **autoimmune** disease, bronchiectasis, **lymphoma**, **sinopulmonary** infections
- **Dec plasma cells, Dec immunoglobulins**

T-cell disorders

DiGeorge syndrome

- **22q11** microdeletion; failure to develop 3rd and 4th pharyngeal pouches ⍰ absent thymus and parathyroids
- **CATCH-22**: **C**ardiac defects (conotruncal abnormalities [eg, tetralogy of Fallot, truncus arteriosus]), **A**bnormal facies, **T**hymic hypoplasia > T-cell deficiency (recurrent viral/ fungal infections), **C**left palate, **H**ypocalcemia 2° to parathyroid aplasia > tetany
- Dec T cells, Dec PTH, Dec Ca2+
- **Thymic shadow absent on CXR**
  DiGeorge syndrome—thymic, parathyroid, cardiac defects
  Velocardiofacial syndrome— palate, facial, cardiac defects

Job syndrome

- **Autosomal dominant hyper-IgE syndrome**
- Learn the **ABCDEF**'s to get a **Job**!
- Inc IgE and Inc eosinophils
  Cold (noninflamed) staphylococcal **A**bscesses, retained **B**aby teeth, **C**oarse facies, **D**ermatologic problems (eczema),
- Inc **IgE**, bone **F**ractures from minor trauma

B- and T-cell disorders

Severe combined immunodeficiency

- Defective IL-2R gamma chain (**most common, X-linked recessive**)
- Adenosine deaminase deficiency (**2nd most common, autosomal recessive**)
- Failure to thrive, chronic diarrhea, thrush
- Recurrent **viral, bacterial, fungal, and protozoal** infections
- **Absence of thymic shadow (CXR)**
- Germinal centers (lymph node biopsy)
- T cells (flow cytometry

Phagocyte dysfunction

Chronic granulomatous disease

- Defect of **NADPH oxidase**
- **X-linked** form most common
- Inc susceptibility to **catalase** ⊕ organisms
- Abnormal dihydrorhodamine (flow cytometry) test = Dec green fluorescence

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BCQs of Immunodeficiency Disorders

1. Most common cause of primary immunodeficiency?
   A. SCID ✔
   B. Leukemia
   C. Lymphoma

2. Secondary immunodeficiency is due to decrease
   A. Natural killer cells
   B. CD4 lymphocytes ✔
   C. CD8 lymphocytes
   D. B lymphocytes

3. 1.8 months old child with recurrent respiratory infections Sinusitis and multiple episodes and on culture The Organisation was identified as klebsiella, B-cells are reduced, all immunoglobulins are low, diagnosis is?
   A. X linked agammaglobulinemia ✔
   B. Combined immunodeficiency
   C. SCID
   D. IG A deficiency

4. A child with Klebsiella Pneumonia infection likely immune deficiency?
   A. IgA deficiency
   B. Bruton agammaglobinemia
   C. Chronic granulomatous disease ✔

5. 11-month old infant had upper and lower respiratory tract infections almost continuously since the time of birth, with organisms including Pneumocystis jiroveci and Pseudomonas aeruginosa identified. The baby also has oropharyngeal candidiasis. The baby succumbs to a cytomegalovirus pneumonitis. Autopsy thymus is markedly hypoplastic, and lymph nodes throughout the body are small, with absent germinal centers on microscopic examination. Which of the following mechanisms is most likely to explain these findings?
   A. Adenosine deaminase deficiency ✔
   B. Thymic hypoplasia
   C. Human immunodeficiency virus infection
   D. Autoantibodies to both T and B lymphocytes
   E. Failure of development of 3rd and 4th pharyngeal pouches

6. A boy with respiratory and git infections with normal lymphocytes but decrease or absent plasma cells?
   A. Isolated IgA deficiency
   B. Common variable immunodeficiency ✔
   C. Di George

Explanation: CVID usually presents after puberty and there is decrease in all plasma cells and immunoglobulins. If there is decrease lymphocytes as well as dec plasma cells along with all immunoglobulins choose SCID.

13. 3-year old child with repeated bacterial infections since infancy. At 32 year we develop **SLE** and his WBC=7850 lymph node biopsy reactive follicular hyperplasia
   A. NADPH deficiency
   B. Decrease of adenosine deaminase
   C. Decrease CD4 lymphocytes
   D. Failure of B cells to become plasma cells ✔

Expplanation: Autoimmune diseases or Lymphoma most common in CVID

A.

7. A middle age female with recurrent chest infections, long history of diarrhea. On stool examination cysts of Giardia lamblia were detected. Peripheral smear reveals normal T cell but B cells are slightly decreased. Serum IgA 73, IgG 300 and IgM is 67. What is the most likely Dx?
   A. Bruton's agammaglobulinemia
   B. Common variable immunodeficiency ✔
   C. HIV infection
   D. Cystic fibrosis

Explanation: Bruton's almost entirely occurs only in males and also cause markedly decrease in B cells. Whereas common variable immunodeficiency occurs in both sex and cause slight decrease in B cells.

8. Neonatal infection can be diagnosed by serum level of
   A. IgA
   B. IgG
   C. IgM ✔
   D. IgE

Explanation: For primary infection igM (first antibody is produced in response to antigen)

9. A boy with respiratory and GIT infections with normal lymphocytes but decrease or absent plasma cells?
   A. Isolated IgA Deficiency
   B. Common variable immunodeficiency ✔
   C. DiGorge

10. 8-month-old baby boy has history of repeated attacks of sinusitis, rhinitis diarrhea and 2 episodes of pneumonia on investigation his B-Lymphocytes are reduced with deficiency of all types of immunoglobulins?
   A. Isolated igA deficiency
   B. Common variable immunodeficiency
   C. X linked Agammaglobulinemia ✔

Explanation: As B lymphocytes are reduced it cannot be IgA deficiency cz there is only reduced IgA while all other cells and immunoglobulins are normal. So it cannot be after puberty so cannot be CVID. It is Agammaglobulinemia cz there is boy and dec all immunoglobulins.

11. A 5 years old baby comes with recurrent cervical lymphadenopathy. Klebsiella pneumonia isolated on each occasion. He is most likely suffering from the immunodeficient state of?
   A. Chronic Granulomatous disease ✔
   B. Commo Variable Agammaglobulinemia
   C. Severe Combined Agammaglobulinemia
   D. Bruton's Agammaglobulinemia

12. A newborn present with tetany serum Calcium 6.3 mg/dl. on examination there is pansystolic murmur on auscultation and few days later develops infections by Pneumoocytic carinii, aspergillus fumigatus and herpes simplex he is likely suffering from
   A. Adenosine deaminase deficiency
   B. 22q11 2 deletion syndrome ✔
   C. B cell/plasma cell defect can produce antibodies

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Peudomonas

Aeruginosa—**aer**obic; Motile, Catalase ⊕, Gram ⊖ rod, Non-lactose fermenting, Oxidase ⊕

Frequently found in water. It has a grape-like odor.

PSEUDOMONAS is associated with:

- **P**neumonia,
- **S**epsis,
- **E**cthyma gangrenosum,
- **U**TIs,
- **D**iabetes,
- **O**steomyelitis,
- **M**ucoid polysaccharide capsule,
- **O**titis externa (swimmer's ear),
- **N**osocomial infections (eg, catheters, equipment),
- **A**ddicts (drug abusers),
- **S**kin infections (eg, hot tub folliculitis, wound infection in burn victims). Mucoid polysaccharide capsule may contribute to chronic pneumonia in cystic fibrosis patients due to biofilm formation.

Produces **PEEP**:

- **P**hospholipase C (degrades cell membranes);
- **E**ndotoxin (fever, shock)
- **E**xotoxin A (inactivates EF-2);
- **P**igments: pyoverdine and pyocyanin (blue-green pigment
-

Treatments include "**CAMPFIRE**" drugs:

- **C**arbapenems
- **A**minoglycosides
- **M**onobactams
- **P**olymyxins (eg, Polymyxin B, Colistin)
- **F**luoroquinolones (eg, Ciprofloxacin, Levofloxacin)
- Th**IR**d- and Fourth-generation cephalosporins (eg, Ceftazidime, Cefepime)
- **E**xtended-spectrum Penicillins (eg, Piperacillin, Ticarcillin)

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Pharmacology

Frequently tested BCQS

Ketamine

- Provide profound analgesia
- Choice of anesthetic in asthma for surgery because **it** causes **bronchodilation**
- Anesthetic having **least respiratory depression**
- **Increases intracranial pressure** so contraindicated in head injuries.
- Causing **delirium** (Atropine is used for delirium)
- Anesthetic of choice in **hemodynamically unstable patients** for surgery
- Ketamine is used in the repeated dressing of the **burn patients**: It's given IM in burn patients to relief pain as well.
- In hemodynamically unstable patient it's given as I.V via central line to achieve rapid onset and maximum bioavailability in such case because it has central vagolytic and adrenergic properties so it will increase myocardial centrality and heart rate.

Halothane

- Dissociates in light
- Increase cerebral blood flow
- causes Bradycardia
- Heat during surgery by skeletal muscle contraction
- **Causes Malignant hyperthermia**
- Malignant hyperthermia **treated by Dantrolene**

Bupivacaine

- Bupivacaine **first** sign of over dose: **(Tinnitus) Ringing** of ears
- Bupivacaine **serious** adverse effects: **Arrhythmias**
- **Bupivacaine** block: **Voltage gated Na channels**
- **Ropivacaine** preferred over bupivacaine: **less toxic**
- Maximum safe dose of **Bupivacaine**: **150 mg**

Frequently tested BCQS

- **Type of bond** Ester or Amide in LA determine **Duration of action**
- Onset and direction of local anesthesia depends upon: **Tissue pH**
- Lipid solubility of LA determines potency
- GA with **low water solubility**: **Propofol**
- **Longest** acting NM blocker: **Pancuronium**
- NM Blocker in a patient with **pheochromocytoma**: **Pancuronium**
- Drug which reverses the hypotension caused by anesthetic / epidural or sub Dural anesthesia: **Ephedrine**
- **More local anesthesia concentration** in blood in: **Intercostal block**
- **Succinylcholine toxicity** in individuals having deficiency of **pseudocholinesterase**
- During general anesthesia **halothane** is given in combination with: **Nitrous oxide**
- In **hypovolemia** with hypotension **isoflurane** should not be given Because it is a potent **vasodilator**.
- In anesthetized patient, **heat will not** be produced due to: **Loss of muscle tone**
- **Morphine** reduces **apneic** threshold
- Transport of local **anesthetic** across **placenta**: **Simple diffusion**
- Which of the following narcotic when given epidural causes **delayed respiratory depression**: **Fentanyl**
- **Benzodiazepine** cause hypotension in: **Hypovolemic Patient**
- **Flumazenil**: Doesn't causes paradoxical **tachycardia**
- Pt with allergy iv **xylocaine** given it causes: **Mild syncope**
- Toxic effect of **lignocaine**: Prolong **seizures** for 7-9 hours
- Neuromuscular blocking agent safe in **Asthma**: **Cisatracurium**
- Neuromuscular agent safe in **Liver disease**: **Atracuronium** (extra hepatic metabolism)
- **Enflurane**: is **Pro-convulsant** it causes tonic colonic seizures (Epilepsy = Enflurane)
- DOC for anesthesia in patient with **fits**: **Thiopentine**

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Pharmacology

Frequently tested BCQS

- **Basic drug** binds to: **Alpha glycoproteins**
- **Acidic** drug binds to: **Albumin**
- A **semiconscious** patient is brought due to some **drug intake**, **NaHCO3** administration **reverses** the effect of that drug the drug is: **Phenobarbital**
- Man, with **pin point pupil** not responding to Naloxone: **Phenobarbitone**
- Lady treated for epilepsy with **phenytoin** now wants to get **pregnant** which antiepileptic is safer in pregnancy: **Carbamazepine > Phenobarbitone**
- Advanced stage (grade IV) Hepatic encephalopathy with acute renal failure, by which drug= Paracetamol
- Which drug can lead to progression of Hepatic encephalopathy: Diuretics
- Mechanism of action of **steroid** inflammation: **Phospholipase**
- **Warfarin** effect increased by: **Cimetidine**
- Following drugs promote each other's action: **Atropine & Amitriptyline**
- Patient taking **MAO inhibitors**, given **barbiturates**, what will happen: **Coma**
- Patient on **MAO inhibitors**, if he takes **coffee** = **HTN**
- **Cotrimoxazole** given C/O Red urine, Diagnosis: **G6PD** deficiency
- Drug with **atropine** like action= **Scopolamine**
- **Digoxin toxicity** increased by: **Hydrochlorothiazide, Quinidine**
- P450 inducer: **Phenobarbitone**
- **Probenecid** decreases renal excretion of penicillin
- **Digoxin toxicity** increased by: **Hypokalemia, Alkalosis**
- Use of **Terbutaline** in preventing preterm labor causes: **Hypoglycemia**
- **Chlorpromazine** adverse effect: **Dystonic** movement
- Naturally occurring **alkaloids**: Morphine and Codeine
- Side effect of **TCAs**: General tonic colonic seizures
- Therapeutic index of drug indicates: Safety
- Patient having hypertension which Alpha Blocker to be given: **Doxazocin** > tamsulosin
- Low dose **heparin** act by inhibiting: **Factor 10a**
- Most common drug used in nasal and sinuses **fungal** infection: **Amphotericin-B** (Mucor)
- Sucralfate-Cimetidine interaction: **Sucralfate does not let Cimetidine get absorbed**
- Most specific manifestation of Penicillin **Hypersensitivity**: **Bronchospasm**
- **Cabergoline**: **D 2** agonist high affinity
- **Acetaminophen** in urine is due to which modification: **Glucuronidation**
- Which antibiotic is present in **saliva**: **Erythromycin**
- Which drug does **not cross blood brain barrier**: **Dopamine**
- HTN female in OPD with indirect **hyperbilirubinemia**: **Methyldopa**
- **Asthmatic** patient underwent cholecystectomy, post-op analgesia: **Paracetamol (Provas infusion)**
- Most common side effect of **diazepam** when used in **labor**: **Neonatal Hypotonia**
- Why the **dose of theophylline is smaller in children as compared to Adults**: Decrease metabolism due to absence of glucuronide Transferase in children during early age.
- **Vancomycin**: Inhibitor of **proteoglycan**
- **Metronidazole** MOA: Damages **DNA**
- Highest bioavailability of antiemetic: Metoclopramide
- **First FDA** approved bio engineered drug: **Insulin**
- Drug used in **headache** contraindicated in peripheral vascular disease: **Ergometrine**
- Best way to manage **febrile blood reaction** are: **Paracetamol**
- Effect of **TCA** starts as **analgesic** at: **3 - 4** week

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Pharmacology

Frequently tested BCQS

A 30-year-old housewife, under treatment for pulmonary Tuberculosis, becomes pregnant in spite of regular use of oral Contraceptives. Which of the following drugs being taken by her may be responsible for the failure of oral contraceptives?

A. Ethambutol
B. Ferrous sulphate
C. Isoniazid
D. codeine
E. Rifampicin ✔

Intensive care unit patients with poor nutrition & receiving broad spectrum antibiotics are likely to exhibit:

A. Increased factor VII activity
B. Increased vitamin K synthesis
C. Shortened bleeding time
D. Reduced synthesis of factor VIII
E. Reduced synthesis of prothrombin ✔

All of the following are true of drug conjugates with Glucuronic acid except;

A. Easily excretable
B. Less toxic
C. Not reversible ✔
D. Poorly formed in neonates
E. Water soluble

Factors which regulate the renal excretion of drugs except

A. Age of the patient
B. Degree of ionization of the drug in renal tubules
C. Glomerular filtration rate
D. Ph of renal tubular fluid
E. Route of administration ✔

Plasma half-life of a drug depends on its

A. Dose
B. Rate of absorption
C. Rate of clearance ✔
D. Route of administration
E. Volume of distribution

Blockade of dopaminergic receptor by chlorpromazine results in:

F. Psychotic effect
G. Anti emetic effect
H. Galactocemia
I. Hypotension
J. Parkinsonism ✔

A patient is has developed digoxin toxicity his plasma level of dioxin is 4 ng/dl (Plasma half-life of digoxin is 36h). How much time is required so that plasma level of digoxin drops to safe level of 1 ng/dl

A. 36 hr
B. 52 hr
C. 72 hr ✔
D. 92 hr
E. 112 hr

Explanation: 4>2>1 , so two half life period= 36+36= 7

A ten year old girl consulted an ophthalmologist for painful congested eyes. Investigations revealed that she was suffering from herpes simplex primary keratoconjunctivitis. For this patient you should prescribe local use of:

A. Chloramphenicol
B. Clotrimazole
C. Gentamicin
D. Sulfacetamide
E. Trifluridine ✔

A 50 year old semi comatose diabetic patient has blood sugar of 650 mg%. The insulin of choice for emergency treatment of this patient is:

A. Lente
B. NPH
C. Protamine zinc
D. Soluble regular ✔

12 year old boy is found to have tape worm infestation. In this case the drug of choice is:

A. Albendazole
B. Mebendazole
C. Niclosamide ✔
D. Piperazine citrate
E. Pyrantel pamoate

A semiconscious patient is brought to the emergency room. He has history of taking some unknown drug. $NaHCO_3$ reverses the action of the drug. Which drug the patient has likely taken?

A. Phenobarbital ✔
B. Phenothiazine
C. Morphine
D. Diazepam
E. Alcohol

Meu opiate receptors are responsible for following actions except:

A. Meiosis
B. Bradycardia
C. Hypothermia
D. Bronchodilation ✔

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Pharmacology

Anti-Thyroid drugs in Pregnancy

- 1st Trimester: PTU
- 2nd & 3rd Trimester: Methimazole
- Methimazole =Teratogenic:
- PTU = Hepatotoxic
- Thyroxine does not cross placenta

Sickness

- Acetazolamide for **Mountain Sickness**
- Meclizine, Cyclizine (anti Histamine) and Scopolamine (anti Muscarinic) for **Motion sickness**
- Pyridoxine for **Morning sickness**

OCPs

- Estrogen containing OCPs → Increases risk of Thromboembolism > Breast CA
- **High Estrogen** containing OCPs Increases risk of **endometrial** CA
- **Low Estrogen** containing OCPs Increases risk of **Hepatic Adenoma**

Oral Hypoglycemic agents

- Safest drug in **Elderly** DM 2: **Tolbutamide** (Sulfonylurea)
- For **obese** best drug: **Metformin** (it does not causes hypoglycemia)
- For **non-obese** best drug: **Sulfonylurea** (it may cause hypoglycemia)
- A lady on antidiabetics now C/O **weight loss** drug responsible: **Metformin**

Cox inhibitors

- Highly **selective** Cox 2 inhibitor: **Celecoxib**
- Highly **potent** Cox 2 inhibitor: **Meloxicam**
- **Irreversible** inhibitor of Cox 1 and Cox 2: **Aspirin**
- **Reversible** inhibitor of COx 1 and Cox 2: **NSAIDS**
-

Aspirin

- **Aspirin** and other **NSIADs** act on: **Cyclooxygenase**
- **Lose dose aspirin** inhibit: **TX A2**
- Aspirin adverse effect in normal dose: **GI disturbance**
- Aspirin overdose: **Tinnitus**
- Aspirin overdose after 12 to 24 hours: **Reparatory alkalosis**
- Aspirin overdose for days: **Raised anion gap metabolic acidosis**
- Aspirin overdose can also cause **Hyperthermia**
- **Salicylate** excretion increased by: **IV NaHCO3**

Antacids

- Aluminum hydroxide causes constipation
- Magnesium hydroxide causes diarrhea (**Mg**=Motion)

Some notorious drugs

- **Granulocytopenia**: Phenytoin, Clozapine
- **Methemoglobinemia**: Procaine, Benzocaine
- **Corneal Opacity**: chloroquine, phenothiazines
- **Reflex tachycardia**: Nitroglycerine, CA channel blockers, Pethidine > Morphine
- **Pseudo membranous colitis**: Clindamycin > Amikacin + clavulanic acid > ceftriaxone, cefotaxime

Syndromes

- Grey baby syndrome= Chloramphenicol
- Red man syndrome = Vancomycin
- Grey man syndrome = Amiodarone

Drug induced SLE by "**Is Py Qaim Hy**"

- Isoniazid
- Phenytoin
- Quinidine
- Hydralazine

β-lactamase inhibitors: CAST

- **C**lavulanic acid
- **A**vibactam
- **S**ulbactam
- **T**azobactam

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Pharmacology

Mechanisms of action

- **Penicillin**: cell wall synthesis inhibitor
- **Tetracycline**: inhibit protein synthesis
- **Rifampicin**: inhibit transcription
- **Azathioprine**: inhibit both cellular & cytological immune response
- **Cyclosporin**: blocks T cell, differentiation blocks T cell maturation, Dec host response to graft
- **Labetalol**: alpha + beta blocker
- **Clonidine**: centrally acting antihypertensive, pre synaptic alpha 2 agonists in vasomotor center of brain, decreases sympathetic outflow to BVs
- **Steroids**: inhibit phospholipase A2
- **Sulphonamides**: inhibit tetrahydrofolate in bacteria
- **Na-Cromoglycate**: Mast cell stabilizer
- **Ipratropium**: Decreases Ach release in bronchi
- **Furosemide**: - smooth muscle relaxation, Rapid diuresis
- **Morphine**: releases histamine
- **Heparin**: inhibits clot propagation (not clot organization)
- **EPO** acts on stem cells (not CFU)
- **Digoxin:** increases contractility n decreases heart rate

Drug of choice

- A-Fib: **Digoxin**
- HOCM: **Verapamil**
- Anaphylactic shock: **Epinephrine**
- Partial absent seizures: **Ethosuximide**
- Status epilepticus DOC to start with: **Lorazepam**
- DOC systemic fungal infection: **Amphotericin**
- Ketamine hallucination: **Atropine**
- E.coli UTI: **Ciprofloxacin**
- HCV : **IFN & Ribavirin**
- SAH : **Nimodipine**
- OCD: **Clomipramine**

Side effects

- **Streptomycin**: Ototoxic /hearing loss
- **Aminoglycosides**: ototoxic
- **Dipyridamole**: coronary steal syndrome
- **Thiazides**: **Hypokalemia (↓ K) and Hyper-GLUC (↑ Glucose ↑ Uric acid(gout) ↑Ca) Thiazides: Thrombocytopenia**
- **Chlorpromazine**: Extra pyramidal side effects (dystonia)
- **Theophylline**: Nausea and vomiting > Tachycardia > tremors > seizures
- **Phenytoin**: granulocytopenia, hirsutism, gingival hyperplasia, Interstitial Pneumonitis, drug induced SLE, Ataxia, megaloblastic anemia (folate depletion), painful swollen gums.
- **Methotrexate**: Hepatotoxic, pulmonary Fibrosis, megaloblastic anemia
- **Lithium**: Hypothyroidism, renal toxicity, cardiac conduction abnormalities, nephrogenic DI, gastric distress, tremors
- **ACE inhibitors**: Bone marrow depression, neutropenia, proteinuria
- **Sulphonamides**: G6PD → hemolysis, kernicterus, Nephrotoxic
- **Opioid poisoning**: Respiratory depression
- **Aminoglycosides**: both renal & ototoxicity
- **Bupivacaine**: Cardiotoxic
- **Trazodone**: Priapism
- **Terbutaline**: Acidosis, Fine tremors
- **Azathioprine**: Hepatosplenic T cell Lymphoma
- **Didanosine**: Peripheral neuropathy
- **Haloperidol**: Neuroleptic malignant syndrome
- **Na-Valproate**: Flexing tremor
- **Adriamycin**: Cardiomegaly
- **Amiodarone**: Thyroid dysfunction
- **Pyrazinamide**: gout
- **Vancomycin**: Red man syndrome
- **Clindamycin**: Pseudo membranous colitis
- **Trimethapan**: Urinary retention in elderly
- **Nitro-Glycerine**: Throbbing headache
- **Methyldopa**: Indirect hyperbilirubinemia

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Lymphatic Drainage of whole body

GIT

- Stomach, Duodenum (upper half) + Liver, Spleen, Pancreas = **Celiac**
- Duodenum (lower half) up to Splenic flexure = **Superior Mesenteric**
- Splenic flexure up to upper rectum = **Inferior Mesenteric**
- Lower rectum to Anal canal -upper half (below the pectinate line)= **Internal iliac**
- Anal canal- lower half (below the pectinate line) = **Superficial Inguinal**
-

Para aortic

- Kidneys
- Ovaries
- Testis

Uterus

- Fundus: para aortic
- Body: External iliac
- Cervix: Internal iliac

Vagina

- Upper 1/3rd: External iliac
- Middle 1/3rd: Internal iliac
- Lower 1/3rd (outermost): Superficial Inguinal

Urinary system

- Bladder: External iliac
- Prostate and prostatic urethra: Internal iliac
- Posterior urethra: Internal iliac
- Anterior urethra: Superficial inguinal

Genital system

- Penile skin: External iliac
- Corpora + Glans: Deep inguinal
- Scrotum: Superficial inguinal

Tounge

- Tip: sub mental
- Anterior 2/3rd: Submandibular
- Posterior 1/3rd: Deep cervical

Lips

- Lower lip: Sub mental, Submandibular
- Upper lip: Submandibular, Parotid, Post auricular

Superficial inguinal

- Skin below umbilicus except Popliteal territory
- Lower half of anal canal, anus, peri anal skin
- Labia, Vulva, lower half of vagina
- Scrotum

Miscellaneous

- Head and neck = **Cervical, supraclavicular**
- **Deep cervical** = Thyroid gland
- **Mediastinal**= Trachea and Esophagus
- **Hilar**= Lungs
- **Axillary**= Upper limb, Breast, skin above umbilicus
- **Popliteal**= Dorsolateral foot, posterior calf

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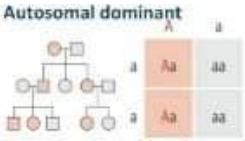
Genetics

Autosomal dominant

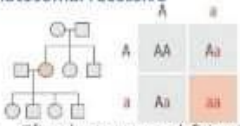


- Both **males and females** are affected
- With one affected (heterozygous) parent, on average, 1/2 of children affected.

A Vary Dominant Heriditary Family

- **A**dult polycystic kidney disease
- **V**on Willebrand/ **V**on Hipple-Lindau
- **D**ystrophia myotonica
- **O**steogenesis imperfecta
- **M**arfan syndrome/ **M**EN Syndrome
- **I**ntermittent porphyria
- **N**eurofibromatosis type-1
- **A**chodroplasia
- **N**eurofibromatosis type-2
- Tuberous Sclerosis
- **H**ereditary spherocytosis/ **H**untington disease
- **F**amilial Adenomatous polyposis/ **F**amilial hypercholestrolemia

Autosomal recessive

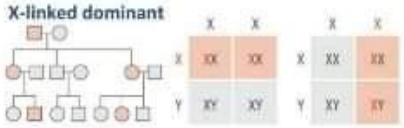


- Often due to enzyme deficiencies.
- Usually seen in only 1 generation.
- Commonly more severe than dominant disorders.
- patients often present in childhood.
  Inc risk in consanguineous families.
- With 2 carrier (heterozygous) parents, on average: ¼ of children will be affected (homozygous), 1/2 of children will be carriers, and ¼ of children will be neither affected nor carriers.
- Unaffected individual with affected sibling has 2/3 probability of being a carrier.

Autosomal Recessive: **ABCDEFGH**

- **A**lbinism/ **A**lkaptonuria
- **B**eta Thalacemia
- **C**ystic Fibrosis/ **C**ongenital Adrenal Hyperplasia
- **D**ubi Jobson syndrome
- **E**mphysema
- **F**riedreich ataxia
- **G**alactosemia/ **G**lycogen storage diseases
- **H**emochromatosis/ **H**omocystinuria

X-linked dominant



- Transmitted through both parents. Mothers transmit to 50% of daughters and sons; fathers transmit to all daughters but no sons.

Two most common Disorders are

- **Alport** syndrome
- **Fragile** X syndrome

X-linked recessive

- Sons of heterozygous mothers have a 50% chance of being affected. No male-to-male transmission.
- Skips generations.
- Commonly more severe in males.

X linked Recessive: **F**emales **G**ive **H**er **B**oys **H**er X-**L**inked **D**isorders

- **F**abry disease
- **G**6PD deficiency
- **H**unter syndrome
- **B**ruten Agammaglobinemia
- **H**aemophilia A/B
- **L**esh-Nyhan Syndrome
- **D**uchenne muscular dystrophy

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Rx
Dr. Rashid Mahmood

Nutrition

Protein-energy malnutrition

Kwashiorkor results from protein deficient **MEALS**:

- **M**alnutrition
- **E**dema
- **A**nemia
- **L**iver (fatty)
- **S**kin lesions (eg, hyperkeratosis, dyspigmentation)
  Note: Marasmus Malnutrition not causing edema. Diet is deficient in calories but no nutrients are entirely absent. **M**arasmus results in **M**uscle wasting

Child of thin built depigmented apathic what's the likely cause

A. Marasmus ✔
B. Kwashiorkor

11-month-old baby, 60% of ideal body weight, baby is small, listless, not responding to vocals, contusion on thigh. Diagnosis?

A. Marasmus
B. Kwashiorkor
C. Physical abuse ✔

Flag sign in hairs is characteristic of

A. Kwashiorkor ✔
B. Marasmus
C. Chronic iron deficiency
D. Acute muscle wasting

Kwashiorkor is characterized by:

A. Extreme weight loss (wt. <60%)
B. Normal Hair
C. Flaky paint dermatitis ✔

Difference feature of kwashiorkor from Marasmus

A. Fat loss
B. Pitting edema ✔

Difference between kwashiorkor and Marasmus

A. Bilateral pitting edema ✔
B. Muscle wasting

Organ with ability to utilize ketone bodies during starvation?

A. Brain ✔
B. Liver
C. Kidney

Explanation:
Produced by: **Liver,** Utilized by: **Brain,** Excreted by: **Kidney**

Balance Diet

- Carbohydrates = **45-65%** energy
- Proteins = **25-45%** energy
- Lipids = **15-20%** energy
- Minimum caloric requirement for an adult man in a bed without any illness is =**25 to 30cal/kg** body weight

1 gram of alcohol yield?

A. 4kcal
B. 9kcal
C. 7kcal ✔
D. 11kcal
E. 4.9kcal

Explanation: 1g **Carbhydrates/Protein** = **3.6 or 4** kcal, 1g **Alcohol** = **7** kcal, 1g **fatty acid** = **9.1** kcal

Maximum energy reserve in body in term of kcal

A. Fat ✔
B. Protein
C. Liver glycogen
D. Muscle glycogen

More energy sources?

A. Starch
B. Fats ✔

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Miscellaneous High Yield BCQs

1. Which nerve is most likely to be injured in General anesthesia:
A. Radial
B. Sciatic
C. Common peroneal
D. Ulnar ✔
Explanation: Ulner ➡ Common peroneal

2. Overdose of thyroxine is associated with
A. Gluconeogenesis✔
B. Lipogenesis
C. Protein synthesis
D. Atherosclerosis
Explanation: Gluconeogenesis and Glycogenolysis

3. In an Asthmatic and IHD patient immediate treatment of HTN during surgery is
A. IV nitroglycerin ✔
B. IV sodium nitropriside
C. Hydralazine
D. Both
Explanation: Not only decreases BP but also increases blood supply to heart by vasodilation of coronary arteries.

4. Respiratory Depression is LEAST after the induction dose of which of the following drugs?
A. Etomidate
B. Ketamine ✔
C. Fentanyl
D. Propofol
Explaination: One of the advantages of ketamine is the minimal effect on respirations. After the intravenous induction dose of 2mg/kg, general anesthesia is induced within 30 to 60 seconds with, at most, a transient decrease in respirations (Paco2 rarely increases more than 3mm Hg).
With unusually high doses or if opioids are
also administered, apnea can occur.

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Miscellaneous High Yield BCQs

5. Lady presented with tremors, and problem in writing.He is also have family history of similar complain. What you will advice
A. Amitryptiline
B. Ropirinole
C. Dopamine
D. Propranol✔

Explanation:Don't mix it up with Parkinson or cerebeller disorder as there is no history of CNS related complaints. Problem in writing and Family history is posítive. It is Benign Essential Tremor and we will advice Propranolol.

6. Cause of fatty liver in our country is
A. Malnutrition✔
B. Obesity
C. HTN
Explanation: Malnutritionin ➡️ Inc fats intake ➡️ Obesity

7. Ovulation does not occur during lactation due to inhibition of GnRh by?
A. Estrogen
B. Progesterone
C. Prolectin✔

8. Lactation does not occur in pregnancy due to?
A. Estrogen
B. Progesterone
C. Prolectin
D. Both Estrogen and Progesterone✔
Explanation: Both Estrogen and Progesterone, if have to choose one, choose Progesterone.

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Miscellaneous High Yield BCQs

9. At bifurcation of abdominal aorta there is a nerve which passes from superior hypogastric plexus inferiorly to the inferior hypogastric plexus, which nerve is this?
A. Hypogastric nerve✓
B. Greater splanchnic nerve
C. Lesser splanic nerve
D. Least splanchnic nerve

10. Man with weight gain, his collar has now become tight and when he turns his head towards the right side he faints, this is due to?
A. Increased ANP
B. Increased CO
C. Increased TPR✓
D. Increased Venous return

11. Most common cause of CAD is
A. Ischemia
B. HTN✓
C. Diabetes
D. Hypoxia

12. After RTA disuse atrophy due to
A.Dec number of cells
B. Dec cell size
C. Denervation✓

13. Child with diarrhea and villous atrophy not improved with gluten free diet:
A. Giardiasis ✓
B. Whipple
C. Shigella

14. Bronchopulmonary segments
A. 9 in left 10 in right
B. 10 in both✓

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Miscellaneous High Yield BCQs

15. Most effective for DVT prophylaxis??
A. Warfarin
B. Heparin
C. LMWH✔
D. Direct thrombin inhibitors

16. Beta blockers are used with caution in pregnancy because it cause?
A. Dec placental perfusion
B. Fetal and neonatal Bradycard
C.Hypoglycemia
D. All of the above✔

17.Half life means?
A. Reaches stable dose quickly✔
B. Rapid clearance
C. Bioavailibility
D.Freely filtered in glomeruli

18. Angina may be worsened by which of following
A.Atropine
B. Salbutamol
C. Vesopressin
D. Theophylline✔

19. Patient unable to close mouth. Damage would be to
A.Medial pterygoid✔
B.Lateral pterygoid
Explanation: Medial Pterygoid➡️ Closes mouth, Lateral Pterygoid➡️ Opens the mouth

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Miscellaneous High Yield BCQs

20. Most common cause of dysentery
A. Shigella
B. Salmonella ✓
C. E. Coli
D. Staphylococcus
Explanation: Salmonella and c.jejuni are most common cause of blood diarrhea.

21. Hypercalcemia results in increased levels of which one of the following?
A. 24,25 cholecalciferol✓
B. 1,25 vitamin D
C. 25 vitamin D

22. True hermaphrodites are
A. XX✓
B. XY
C. XX/XY
D. XXY
Explanation: XX>>XX/XY>>XXY

22. Receptors for 128 Hz are
A. Meisners
B. Pacinians✓
C. Merkel dics
Explanation:
Low frequency i.e 0 to 40 Hz ➡️ Mesiners
High frequency i.e 100 to 400 Hz ➡️ Pacinian

23. Direct causes grade 4 Encephalopathy
A.Diuretics
B. PCM ✓
Explanation:
Progress to grade 4 = diuretics
Direct cause of grade 4 = paracetamol, as it can cause directly cause grade 4 encephalopathy without progressing through grade 1,2,3...

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Miscellaneous High Yield BCQs

24. On which cell, the receptors for IgE is present?
A. Basophils
B. Mast cells ✔
Explanation: present on both, but most abundant on Mast cells.

25. Which of the following causes delayed Respiratory depression?
A. Fentanyl
B. Morphine ✔
Explanation: Morphine causes delayed Respiratory depression 19 hours after single intra thecal dose. Metabolite of morphine which has long half life.
Fentanyl causes early respiratory depression after single intra thecal dose. Fentanyl Metabolites are pharmacologically inactive... That's why Fentanyl is safer option in renal and hepatic decompensation...

26. Primordial germ cells arise at ??
A. 3rd week ✔
B. 3rd month
C. 6th week
Explanation:Arise at ➡️ 3rd week, Migrate at ➡️6th week

27. Loss of water by insensible perspiration through skin
A. 200 to 400 ml✔
B. 400 to 600 ml
C. 600 to 800 ml
D. 800 to 1000 ml

28. Which has highest protein contents
A. Lymph
B. Plasma✔
C. CSF
D.peritoneal fluid

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Miscellaneous High Yield BCQs

29. A healthy man with severe dehydration can be differentiated from SIADH by
A. Plasma Osmolarity✓
B. Urine Osmolarity
C. Plasma ADH
D. Free water clearance
Explanation: in dehydration, plasma osmolarity is high while in SIADH plasma osmolarity is low. while in both cases urine osmolarity is high.

30. Short transient action of Angiotension II
A. Thirst ✓
B. Vassoconstriction
C. Salt retention
D. Aldosterone release

31. Most common cause of congenital hypothroidism
A. Defective embryogenesis/ thyroid dysgenesis
B. Maternal iodine deficiency✓

32. Cause of infant tumor due to radiations
A. Leukemia
B. Osteosarcomas
C. Thyroid ✓

33. Cause of adult tumor due to radiations
A. Thyroid
B. Osteosarcomas
C. Leukemia ✓

34. Risk factor for bladder CA
A. Smoking ✓
B. Hydroxarbons
Smoking ➡️ Hydrocarbons

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Miscellaneous High Yield BCQs

35. Hypokaelaemia occurs in
A. Crohn's disease
B. Acute renal failure
C. Water intoxication
D. Gastroenteritis✔
E. Treatment with beta adrenergic blockers
Explanation: Gastroenteritis (diarrhea) causes hypokalemia due to loss of K+ in feces.

36. Sodium clearance is decreased by:
A. Increased reabsorption✔
B. Decrease aldosterone
C. Osmotic diuresisa
D. Water osmosis
Explanation: When Na+ reabsorption is increased, less amount of plasma will be cleared of Na+. So, Na+ clearance will decrease

37. In urine which substance concentration is higher than plasma
A. Na+
B. Bicarbonate
C. Glucose
D. Urea✔
E. Albumin
Explanation: Almost all Na, HCO3, and glucose are reabsorbed, so their conc. is higher in plasma than in urine.

38. Erythropoetin is secreted from
A. Liver cell
B. Peritubular interstitium of kidney ✔
C. Macula densa of kidney
D. Liver
Explanation: Erythropoietin is secreted by "mesangial cells of peritubular capillaries" of the kidneys.

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Miscellaneous High Yield BCQs

39. Diagnosis of TB is confirmed by
A. PCR
B. Sputum for AFB ✓
Explanation:
Microscopic diagnosis of TB is made by ➡️ Caseous necrosis/caseating granulomas
Histological diagnosis of TB is made by ➡️ Epithelioid cells

40. In which organ blood is regulated early by sympathetic system and then by local metabolites
A. Skin
B. Exercise muscles ✓
C. Heart
D. Brain
E. Spleen

41. In which organ blood is regulated primarily by sympathetic system rather than by local metabolites
A. Skin ✓
B. Exercise muscles
C. Heart
D. Brain
E. Spleen

42. CNS gray matter repair by
A. Glial cells
B. Astrocytes ✓
Explanation: Astrocytes are analogous to fibroblasts so repair gray matter in CNS.

43. Which structure has nonfunctioning valve
A. coronary sinus ✓
B. AV opening
C. Pulmonary artery
D. Aorta

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44. Septic shock is mainly caused by?
A. Gram Positive Bacteria ✓
B. Gram Negative Bacteria

45. Endotoxin is mainly
A. Gram Positive Bacteria
B. Gram Negative Bacteria✓

46. Oncocytes are seen in any of the following except:
A. Pituitary
B. Thyroid
C. Pancreas
D. Thymus✓

47. During exercise blood flow to which organ decreases
A. Skin
B. Splanchnic
C. Skeletal muscle
D. Kidney✓
Explanation: Kidney➡️ Splanchnic

48. Most likely histological feature of compact bone is
A. Osteocytes reside in canaliculi
B. Haversian canals are obliquely oriented
C. Mostly osteons are oriented in the long axis of the bone
D. Circumferential lamellae from the osteon around central canal ✓

49. Osteons show:
A. Interstitial lamellae
B. Inner circumferential lamellae
C. Outer circumferential lamellae
D. Concentric lamellae containing Volksman canal
E. Concentric lamellae containing Haversian canal✓

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50. Pain of Appendicitis is felt around umbilicus through.
A. Sensory nerve T10
B. Sensory nerves T11 n T 12
C. Sympathetic through T10✔
D. Parasympathetic

51. SA node acts as a pacemaker of the heart because of the fact that it:
A. Is capable of generating impulses spontaneously.
B. Has rich sympathetic innervations.
C. Has poor cholinergic innervations.
D. Generates impulses at the highest rate✔

52. Which of the following is not a feature of PDA
A. more common in females
B. when associated with pulmonary stenosis its patency is advantageous to the child
C. there is continuous machinary murmur in 2nd left intercostal space with thrill
D. ECG is #usually abnormal✔
E. pulse is of high volume.

53. Nucleoli in active protein synthesis?
A. Prominent nucleolus ✔
B. Appear dense
C. Heterochromatin
D. Disappear
E. None

54. Which drug do not cause gynaecomastia:
A. Digoxin
B. Griseofulvin
C. Cimetidine
D. Androgen✔
E. Spironolactone

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55. Highest diffusing capacity across respiratory membrane and in body fluids is
A. helium
B. carbon monooxide
C. carbon dioxide✔
D. nitrogen
E. Oxygen

56. In anterior duodenal perforation the contents will go to
A. right iliac fossa ✔
B. left iliac fossa
C. anterior sub hepatic space
D. posterior sub hepatic space
E. small bursa

57. In anterior duodenal perforation the contents will go to
A. right para colic gutter ✔
B. right iliac fossa
C. anterior sub hepatic space
D. posterior sub hepatic space
E. small bursa
Explanation: R para colic gutter ➡️ R iliac fossa

58. Intestinal obstruction caused by carcinoma colon most likely involves
A. Cecum
B. Ascending colon
C. transverse colon
D. Sigmoid colon✔

59. Structures arranged behind the bladder from Lateral to medial? (Mnemonic = USA)
A. Ureter, seminal vesicles, ampulla of vas deference✔
B. Seminal vesicles. Ureter.ampulla of Vas deference
C. ampulla of Vas deference .Ureter .Seminal vesicle
D. seminal Vesicle. Vas deference. Ureter
E. Vas defernce .Seminal Vesicle. Ureter

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60. Most common remnant of allantois:
A. urachal cyst✔
B. urachal fistula
C. urachal sinus

61. Patent lumen of allantois:
A. urachal cyst
B. urachal fistula✔
C. urachal sinus

62. Patent lumen of allantois in #inferior part or #superior part #only.
A. urachal cyst
B. urachal fistula
C. urachal sinus✔

63. Patent #local area of allantois:
A. urachal cyst✔
B. urachal fistula
C. urachal sinus

64. The most likely cause of hypercalcemia in malignancy
A. parathormone related proteins
B. parathormone
C. calcitonin
D. bone metastasis✔

65. Erythropoiesis occur in all except..
A. Kidney✔
B. Spleen
C. Long bones
D. Flat bones.
E. liver

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Miscellaneous High Yield BCQs

66. Increase in arterial hydrogen ion concentration will stimulate respiratory center through
A. Center chemoreceptor
B. peripheral chemoreceptor✔
C. in aortic and carotid bodies

67. Increase in CSF (interstitial fluid) hydrogen ion concentration will stimulate respiratory center through
A. Center chemoreceptor✔
B. peripheral chemoreceptor
C. in aortic and carotid bodies

68. A young boy has lost about 1.5 litter blood in road side accident. He has decreased GFR and urinary output. The part of renal tubules most involved in bringing back the GFR and urinary output to the normal is
A. Descending loop of Henle
B. Distal convoluted tubules✔
C. Proximal convoluted tubules
D. Thick ascending loop of Henle
E. Think ascending loop of Henle

69. Renal threshold for Glucose is:
A. 180mg/dl
B. 200mg/dl ✔
C. 250mg/dl

70. Renal threshold for Glucose in Arterial blood is
A. 180mg/dl
B. 200mg/dl ✔
C. 250mg/dl

71. Renal threshold for Glucose in Venous blood is
A. 180mg/dl✔
B. 200mg/dl
C. 250mg/dl

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Miscellaneous High Yield BCQs

72. In Bitemporal hemianopia blockage will be seen in
A. Middle (central) part of optic chiasm✓
B. Upper part of optic chiasm
C. Lower part of optic chiasm

73. Posterior communicating artery connects
A. ICA with MCA above oculomotor
B. ICA with MCA below oculomotor
C. ICA with PCA above oculomotor✓

74. Posterior communicating artery a branch of
A. Internal carotid✓
B. External carotid
C. Middle cerebral
D. Posterior superior cerebellar

75. Patient in abducted hand is asked to move hand slowly and smoothly downward but he dropped hand suddenly by his side. Which muscle is most likely torn
A. Deltoid
B. Supraspinatus✓
C. Subscapularis
D. Teres major

76. Which of the following is correct about stored blood.
A. Increased2,3 DPG
B. Dec O2 affinity
C. Increased hemolysis✓

78. Lady producing thick saliva.
A. Alpha1 ✓
B. Alpha1 and beta1
C. Beta1 and alpha2
D. Beta2
Explanation: Alpha 1+ Beta 2 > Alpha 1 > Beta 2

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Miscellaneous High Yield BCQs

79. Anterior cruciate ligament prevents
A. Ant. dislocation of tibia on femur
B. Post dislocation of tibia on femur
C. Ant. dislocation of femur on tibia
D. Post. dislocation of femur on tibia ✔

80. Posterior cruciate ligament prevents
A. Ant. dislocation of tibia on femur
B. Post dislocation of tibia on femur
C. Ant. dislocation of femur on tibia✔
D. Post. dislocation of femur on tibia

81. Anterior cruciate ligament while knee joint flexed prevents
A. Ant. dislocation of tibia on femur✔
B. Post dislocation of tibia on femur
C. Ant. dislocation of femur on tibia
D. Post. dislocation of femur on tibia

82. Posterior cruciate ligament while knee joint flexed prevents
A. Ant. dislocation of tibia on femur
B. Post dislocation of tibia on femur✔
C. Ant. dislocation of femur on tibia
D. Post. dislocation of femur on tibia
👉ACL prevents➡️hyperextension of knee joint
👉PCL prevents➡️hyperflexion of knee joint

83. A patient with pyloric stenosis has chronic vomiting. The most likely biochemical abnormalities in this would be
A. High serum bicarbonate
B. Hypokalemia✔
C. Hyponatremia
D. Hypovolemia
E. Increased kaliuresis

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84. Internal capsule lies medial to?
A. Putamen
B. Cuadate nucleus
C. Globus pallidus✓
D. Amgdaloid nucleus

85. A female had bilateral silicon breast implant placements, now she has arrived with inflammation, which cells will be demonstrated?
A. Lymphocytes
B. Giant Cells✓
C. Plasma cells
D. Neutrophils
E. Eosinophil

86. A couple with first child with down syndrome. Both are young. Father normal. Mother has Robertsonian translocation. What is risk of down syndrome in next baby?
A. 33%
B. 66%
C. 100%
D. 5%✓

87. Neurotransmitter for mood
A. Dopamine
B. Serotonin✓
C. Acetylcholine
D. Epinephrine

88. Lipoma on thigh, local anesthetic xylocaine is given which will be affected first?
A. B fibres
B. C fibres✓
C. A delta
D. A alpha

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89. Bilateral ptosis at the end of the day, confirmatory test
A. Tensilon
B. antibodies against ACh receptor
C. EMG✓✓
D. Edrophonium
E. CT scan

90. A young female presented in OPD with loss of light reflex but intact accommodation reflex. The lesion is at
A. Oculomotor nerve
B. Edinger Westphal nucleus
C. Pretectal area✓✓
D. Frontal eye field
E. Optic nerve

91. Infection of the first web space will be first drained by
A. Epitrochlear lymph node
B. Pectoral group of lymph node
C. Supraclavicular lymph node
D. Infraclavicular lymph node✓✓

92.Mass of hair shaft is mainly due to
A. Cortex✓✓
B. Matrix of nail
C. Basle plus spinosum
D. Sebaceous gland

93. 48-A boy had extraction of decidous teeth and now profusely bleeding which classic hemophilia factor is missing?
A. Factor 9
B. Factor 8 major component
C. Factor 8 minor component✓✓
D. Factor 7

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94. Most abundant Astrocytes in white matter of CNS are?
A. Fibrous astrocytes✔
B. Oligodendrocytes
C. Protoplasmic astrocytes

95. Most abundant cells in Gray matter of CNS are?
A. Fibrous astrocytes
B. Oligodendrocytes
C. Protoplasmic astrocytes✔

96. Most abundant cells in white matter of CNS are?
A. Fibrous astrocytes
B. Oligodendrocytes✔
C. Protoplasmic astrocytes

97.Most abundant glial cells
A. Astrocytes
B. Oligodendrocytes✔
C. Ependymal cells

98. Most potent and most immediate mediator of inflammation
A. Histamine✔
B. Prostaglandin

99. Most potent mediator of pain is
A. Prostaglandin
B. Bradykinins✔

100. True hermaphroditism
A. XX/XY ✔
B. XXY
C. XXX
Explanarion: XX ➡️ XX/XY ➡️ XXY

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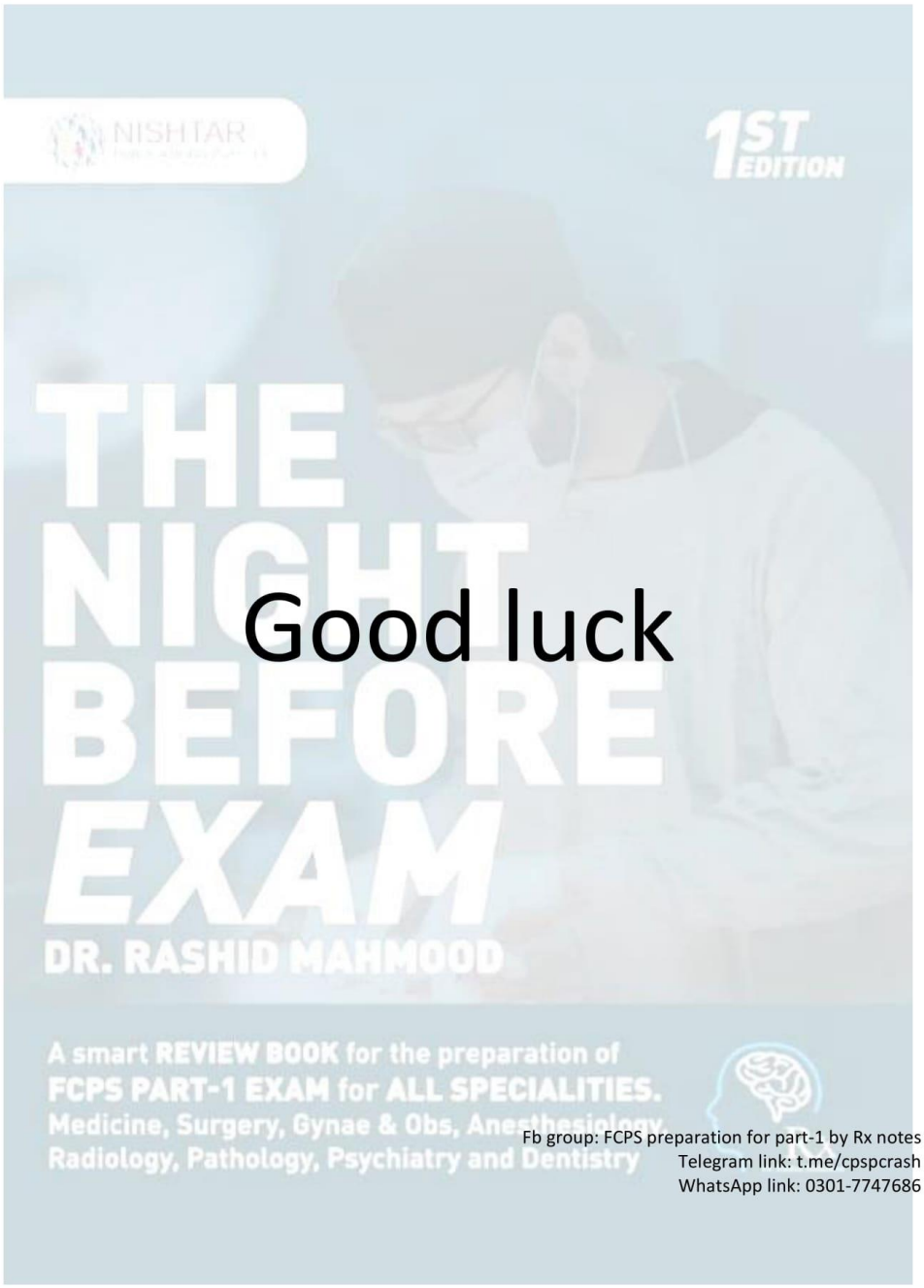

Good luck

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